





# THE AMERICAN JOURNAL of PHARMACEUTICAL EDUCATION

---

VOLUME 20

SPRING, 1956

NUMBER 2

---

MELVIN R. GIBSON  
EDITOR

RUFUS A. LYMAN  
CONSULTING EDITOR

RICHARD A. DENO  
BUSINESS MANAGER

## PUBLICATION COMMITTEE

LOUIS C. ZOPF, CHAIRMAN, EXECUTIVE COMMITTEE, AACP  
STATE UNIVERSITY OF IOWA

RICHARD A. DENO, SECRETARY-TREASURER, AACP  
UNIVERSITY OF MICHIGAN

MELVIN R. GIBSON, EDITOR  
STATE COLLEGE OF WASHINGTON

Published quarterly by the American Association of Colleges of Pharmacy (State College of Washington Press) at the State College of Washington, Pullman, Washington. Subscription price \$4.00. Single copies \$1.00. Re-entered as second class matter February 15, 1956, at the postoffice at Pullman, Washington, under the act of August 24, 1912.

Editorial Office: School of Pharmacy, State College of Washington, Pullman, Washington. Address all communications concerning manuscripts to the Editor. Business Office: College of Pharmacy, University of Michigan, Ann Arbor, Michigan. Address all subscriptions and other business communications to the Business Manager.

## AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY - 1956-1957

### OFFICERS

HAROLD G. HEWITT, PRESIDENT	UNIVERSITY OF CONNECTICUT
THOMAS D. ROWE, VICE PRESIDENT	UNIVERSITY OF MICHIGAN
RICHARD A. DENO, SECRETARY-TREASURER	UNIVERSITY OF MICHIGAN
<i>(After August 1, 1956, George L. Webster, University of Illinois, will assume the office of Secretary-Treasurer)</i>	
LOUIS C. ZOPF, CHAIRMAN, EXECUTIVE COMMITTEE	STATE UNIVERSITY OF IOWA

### EXECUTIVE COMMITTEE\*

LOUIS C. ZOPF, 1957, CHAIRMAN	STATE UNIVERSITY OF IOWA
CHARLES W. BLIVEN, 1957	GEORGE WASHINGTON UNIVERSITY
JACK E. ORR, 1957	MONTANA STATE UNIVERSITY
LOYD E. HARRIS, 1958	OHIO STATE UNIVERSITY
JOSEPH B. SPROWLS, 1958	TEMPLE UNIVERSITY
LINWOOD F. TICE, PAST PRESIDENT	PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE
HAROLD G. HEWITT, PRESIDENT	UNIVERSITY OF CONNECTICUT
THOMAS D. ROWE, VICE PRESIDENT	UNIVERSITY OF MICHIGAN
RICHARD A. DENO, SECRETARY-TREASURER	UNIVERSITY OF MICHIGAN
<i>(After August 1, 1956, George L. Webster, University of Illinois, will assume the office of Secretary-Treasurer and become a member of this committee)</i>	

### HONORARY MEMBERS

ZADA M. COOPER	VILLISCA, IOWA
RUFUS A. LYMAN	1649 SOUTH 21ST, LINCOLN, NEBRASKA

---

\*Specification of a year after the name of a member of the Executive Committee indicates the year in which the term of office terminates at the time of the annual meeting.

## CONTENTS

### THE PRESIDENT

President Harold George Hewitt—the Man and His Life,  
*Melvin R. Gibson* ..... 153

### FEATURE SECTION

University of Illinois College of Pharmacy, *E. R. Series* ..... 158  
New Medical Sciences Building, University of California  
Medical Center, San Francisco, *T. C. Daniels* ..... 163  
Drake's Fitch Hall of Pharmacy, *Byrl E. Benton* ..... 169  
The Facilities of the College of Pharmacy of the University  
of Texas, *Henry M. Burlage and William R. Lloyd* ..... 172

### ARTICLES

Analysis of a Pilot Study of Factors that Motivate Individuals to Elect the Health Sciences as a Career, with Special Reference to Pharmacy, *Robertson Pratt* ..... 175  
An Experience with Curriculum Revision,  
*Arthur G. Zupko and Frank L. Mercer* ..... 191  
Teacher Training for Colleges of Pharmacy, *R. S. McCutcheon* ..... 195  
Pharmaceutical Apprenticeship: The State Boards' Views and Regulations, *J. Leon Lichin* ..... 200  
Bringing Pharmacy to the High School Classroom,  
*Edward J. Rowe* ..... 206  
Pharmacy Discovers Public Relations, *William L. Blockstein and Robert W. Sager* ..... 208  
Business Mortality in Retail Pharmacy and the Pharmacy Administration Program, *Isidore Greenberg* ..... 211  
The Use of the Comprehensive Project Method in Teaching Pharmacy Administration, *S. B. Jeffries and Isidore Greenberg* ..... 215  
Encouraging the Dispensing of Buffered and Isotonic Eye Prescriptions by Practical Teaching Methods, *Jean Brown* ..... 222  
Proceedings of the American Foundation for Pharmaceutical Education ..... 227

EDITORIAL ..... 241  
ANNOUNCEMENTS ..... 244  
MEMORIALS ..... 249  
NEW LITTLE PEOPLE ..... 252  
MARRIAGES ..... 253  
STAFF CHANGES ..... 254  
GENERAL NEWS ..... 256  
COLLEGE NEWS ..... 259  
BOOK REVIEWS ..... 288  
NEW BOOKS ..... 303

## AUTHORS IN THIS ISSUE

**E. R. Series**, Dean, College of Pharmacy, University of Illinois (Ph.D. University of Minnesota, Hon. Sc.D. South Dakota State College)

**T. C. Daniels**, Dean, School of Pharmacy, University of California (Ph.D. University of Indiana)

**Byrl E. Benton**, Dean, College of Pharmacy, Drake University (Ph.D. University of Illinois)

**Henry M. Burlage**, Dean, College of Pharmacy, University of Texas (Ph.D. University of Washington)

**William R. Lloyd**, Associate Professor of Pharmacy, University of Texas (Ph.D. University of Minnesota)

**Robertson Pratt**, Professor of Pharmacognosy and Antibiotics, School of Pharmacy, University of California (Ph.D. Columbia University)

**Arthur G. Zupko**, Associate Dean, Brooklyn College of Pharmacy, Long Island University (Ph.D. Purdue University)

**Frank L. Mercer**, Professor of Pharmacognosy, St. Louis College of Pharmacy and Allied Sciences (Ph.D. Washington University)

**R. S. McCutcheon**, Associate Professor of Pharmacology, Oregon State College (Ph.D. University of Washington)

**J. Leon Lichtin**, Associate Professor of Pharmacy, University of Cincinnati (Ph.D. Ohio State University)

**Edward J. Rowe**, Professor of Pharmacy, Butler University (Ph.D. University of Wisconsin)

**William L. Blockstein**, Administrative Assistant to the Dean and Instructor of Pharmacy, University of Pittsburgh (M.S. University of Pittsburgh)

**Robert W. Sager**, Professor of Pharmacy and Chairman of the Department; Pharmacist-in-Chief, University of Pittsburgh Health Center (Ph.D. University of Washington)

**Isidore Greenberg**, Assistant Professor of Pharmacy Administration, Brooklyn College of Pharmacy, Long Island University (M.S. College of the City of New York)

**S. B. Jeffries**, Associate Professor of Pharmacy Administration, Brooklyn College of Pharmacy, Long Island University (LL.B. Harvard University)

**Jean Brown**, Assistant Professor of Pharmacy, University of Oklahoma (M.S. University of Oklahoma)

# THE PRESIDENT

## PRESIDENT HAROLD GEORGE HEWITT — THE MAN AND HIS LIFE \*

MELVIN R. GIBSON

"... [H]e is intensely interested in human beings. I know he has never taught a subject, only students, during his many years of teaching." This is the new President of the American Association of Colleges of Pharmacy as described by Dean Norton of New York University. One has only to read this tribute and those of some of his friends to know that the Association not only has a new president to guide it, but a magnetic leader of men to inspire it.

Harold George Hewitt was born to Dr. and Mrs. B. E. Hewitt in Wisconsin, October 14, 1901. His father was a practicing Milwaukee dentist whose English parents had come from England to Wisconsin, and his mother was the former Ada Belle Collins whose English ancestors settled first in Virginia and later in Wisconsin. Both Harold and a brother, Kenneth, grew up in Milwaukee.

In 1926 he married Martha Alexander of Cresco, Iowa, and in the same year received the Ph.D. degree from the University of Wisconsin as a student of Dr. Edward Kremers. He had previously received his bachelor's and master's degrees from the University of Wisconsin in 1923 and 1925.

During his early work at the University of Wisconsin he was a research assistant in the Pharmaceutical Experiment Station and an assistant in pharmaceutical inorganic and organic chemistry under Dr. Nellie Wakeman. He was a Hollister Fellow.

The next major step in his career is best described by Dr. L. Grant Hector:

... new organization took place in the middle twenties and many new people were added to the staff. Included in this galaxy of unusually fine professional people joining the University of Buffalo in this period was Doctor Harold Hewitt. He divided his time

\* The author is indebted to the following persons for supplying requested information concerning President Hewitt: Dr. Lewis Froman, President, Russel Sage College; Dr. L. Grant Hector, Vice President, Sonotone Corporation; Dr. A. N. Jorgensen, President, University of Connecticut; Dr. Thomas L. Norton, Dean, School of Commerce, Accounts, and Finance, New York University; Reverend J. Garland Waggoner, Minister The Storrs Congregational Church, Storrs, Connecticut.

in teaching chemistry between the school of pharmacy and the arts college . . . he understood organization and management of a university and its departments and consequently was in a position to render constructive suggestions to the then rapidly growing university.

He was at the University of Buffalo from 1926 to July 1, 1947, rising from assistant professor to become Director of the Pharmaceutical Chemistry Division; at the time of his resignation in 1947 he was Director of the Inorganic Chemistry Division of the Chemistry Department. Known and liked in Buffalo, he was, in the words of Dr. Hector, "...respected by both faculty and students. He was in fact one of the finest and most inspiring teachers that I have ever met."

Dr. Hewitt made contributions beyond the classroom at Buffalo as evidenced by his campus participation and leadership which included the following: member of the college of pharmacy curriculum committee (twenty years), chairman for seventeen; field representative for the public health sciences; with the YMCA and the Rotary Club in vocational guidance work; sponsor and director of open house programs; member of pharmacy executive committee (eighteen years); secretary pharmacy executive committee (ten years); member of university speakers bureau; organizer and adviser for interfraternity council; member of university social committee, student activities committee, Norton Union committee, and university senate; secretary, department of chemistry (five years).

In addition to these varied pursuits, he was avidly interested in the sports program at Buffalo. Dr. Hector recollects, "Not only did he follow the teams in all their games both at home and afield, but he also spent much time with the players and coaches in their practice sessions. His devotion to the small details of athletic problems with the individuals was far beyond any call of duty but endeared him to the hearts of everyone." He served as a member of the athletic council and was its president for three years.

Again from Dr. Hector, "All of us in the physics department watching the capabilities of Harold Hewitt . . . speculated on just how far he could go professionally if he had more of an opportunity. All of us therefore rejoiced when later on he did get the opportunity to go to the University of Connecticut."

In 1947, then, Dr. Hewitt became Dean Hewitt, heading the School of Pharmacy of the University of Connecticut. His presence in Connecticut did not go unappreciated. The following is a copy of a letter written by the late Irving L. Kaufman, President of the Connecticut Pharmaceutical Association, to President Jorgensen of the University of Connecticut in March, 1948, and its entire text is included because of its stirring tribute.



FIG. 1. HAROLD GEORGE HEWITT



FIG. 2. SCHOOL OF PHARMACY, UNIVERSITY OF CONNECTICUT

Dear President Jorgensen:

This letter is probably without precedent, but the Connecticut Pharmaceutical Association members wish you to know how very much pleased they are that the new dean of our college of pharmacy is a man named Harold G. Hewitt.

As president of the organization, I wish to extend to you the felicitations of our group upon this happy choice, and also to tell you some of the reasons for our enthusiasm.

First, almost immediately upon Dean Hewitt's arrival in our state, he expressed an eagerness to co-operate with the aims and objectives of organized pharmacy here. Second, despite the amount of time and energy and late hours involved, he has accepted invitations from all our county groups, and has addressed their meetings; as a matter of fact, he is so well liked that these men from all parts of Connecticut continue to insist that he speak to them every month! Third, he has offered the facilities of the college to our Professional Pharmacy Committee both for their meetings and for the "Refresher Course" which will begin March 29. Fourth, he attends our state conventions and is a featured speaker, bringing a real message, not merely empty words. Fifth, he has the courage, as a member of the editorial staff of the Connecticut Pharmacist, to write constructive criticism, plus suggestions, in his columns. Sixth, he is the epitome of a scholar and gentleman—one who believes in democracy; his handshake is as firm and sincere for the immigrant mother of a student as for the ambassador of her country; he "walks with kings, yet keeps the common touch."

Because of Dean Hewitt's untiring work in co-operating with the retail druggists of our state, the members of the Connecticut Pharmaceutical Association wish to pledge themselves one hundred per cent co-operation with any plans the college of pharmacy—and Dean Hewitt—may have now and in the future. We are certainly fortunate to have a man of his calibre as the college leader at this time.

Faithfully yours,

(signed)

Irving L. Kaufman, President,  
Connecticut Pharmaceutical Association

Even with added administrative responsibilities, Dean Hewitt again engaged enthusiastically in the activities of a new campus, serving as a member of the curriculum committee, advanced study committee, and athletic advisory board. He participated in high school and service club visitations in the interest of pharmacy; served on the financial aids committee and the scholarship committee; became a member of the provost council, administrative council, university senate; and is chairman of the awards committee of the 75th anniversary celebration.

These are some of the contributions he has made to the institutions he has served. What has he done for his profession outside the collegiate framework? The summation is again impressive. Always a leader, he has been active in the functioning of the Con-

necticut Pharmaceutical Association, serving as consultant to the executive committee, chairman of the education and college of pharmacy committee, member of the committee on publications, and member of the committee on foods, drugs, cosmetics and devices. Also in the state he has served as a member of editorial staff of the *Connecticut Pharmacist* and chairman of the state of Connecticut committee on standards for drugs, chemicals, and hospital supplies.

On a national level his energies and capabilities have not been neglected. In the American Association of Colleges of Pharmacy he has served on the council of the Conference of Teachers as the chemistry representative, on the committees on educational and membership standards, problems and plans, world congress for pharmaceutical education, personnel problems, and UNESCO. He has served as vice president of the Association (1950-51) and has been a member of the executive committee (1951-54, 1955-58). He was chairman of the Joint Teachers' Conference (1946-47) and chairman of the Sixth Annual Teachers Seminar of Pharmaceutical Education (1954).

Also on a national level he loaned his talents as alternate or delegate to the USP conventions of 1930, 1940, and 1950. He was a proofreader for USP XV. He also served as a proofreader for NF VII, VIII, IX, and X and as a member of the NF committees on monographs and solutions.

It is not surprising to find him listed in *Who's Who in America*, *Who's Who in the East*, *Who's Who in Education*, *Chemical Who's Who*, and *American Men of Science*.

Tau Kappa Epsilon claims him as a member as well as do the professional undergraduate fraternities, Kappa Psi and Chi Beta Phi, and he is an honorary member of Alpha Zeta Omega, Phi Delta Chi, and Rho Pi Phi. In national honorary fraternities he is listed as a member of Gamma Alpha, Phi Lambda Upsilon, Phi Sigma, Rho Chi, and Sigma Xi.

In national groups he is a member of the American Pharmaceutical Association, the American Association for the Advancement of Science, the American Association of University Professors, the New England Association of Chemistry Teachers, the American Chemical Society, and the Connecticut Academy of Arts and Sciences.

Reverend J. Garland Waggoner introduces another facet of the Hewitt personality, ". . . an extremely fine and an able man . . . He has a broad sphere of community interest." These community interests include membership in the Lions Club, the Mansfield Recreation Park Corporation, and the McKinley Lodge, F. and A.M.,

Milwaukee, Wisconsin. In Buffalo he was a patron of the Chamber Music Series of Buffalo.

With all these activities, one might wonder if President Hewitt has had time to enjoy life. But those who know him know that he enjoys life to the fullest in all its facets. Mrs. Hewitt and he have traveled extensively in North and Central America, Europe, Asia, and the West Indies. Two of his hobbies are gardening and floriculture. He maintains two greenhouses at his Connecticut home for special growing of camellias and orchids. He is a member of the American Orchid Society and the American Camellia Society.

The picture of President Hewitt is more clearly delineated by what his friends say of him as a person:

From Dr. Froman: "I feel the first thing that should be pointed out about Hal is that he is every inch a gentleman and has always been interested in the finer things of life—for example, he is very much interested in music and the theater . . . On the social side, he is one of the most delightful hosts that I know. He is a very good bridge player and an excellent conversationalist."

From Reverend Waggoner: ". . . I have come to appreciate him for the high esteem in which he is held by his colleagues, for his personable characteristics and gentlemanly manner."

From President Jorgensen: "Certainly Hal lends color to this institution. His enthusiasm and jovial spirit are to be found on all occasions."

And as we look forward to the Association year ahead, we look forward to a year that is vibrant and stimulating; one could not expect less under the guidance of Harold Hewitt. We heartily agree with Dr. Froman: ". . . the Association is honoring the right man."

---

*Circumstances have cast the pharmacist into the role of the neighborhood's leading educator. If his leadership be strong, his advice sound, and his understanding of personal and community problems wise, then he leads his community in the direction of sound progress and constructive achievement.*

Walter D. Cocking, Am. J. Pharm. Ed., 3, 127 (1939)

## FEATURE SECTION

*The following four articles were requested by the Editor to illustrate outstanding college of pharmacy buildings. These four were chosen to illustrate the widely varying structural needs of colleges of pharmacy.*

### UNIVERSITY OF ILLINOIS COLLEGE OF PHARMACY

E. R. SERLES

July 21, 1954, marked the occupancy of the new facilities, and although not fully completed, they represent the most modern building as a home for pharmaceutical education anywhere in the world.

Dr. Paul Briggs, speaking on the occasion of the Open House and Homecoming celebration offered the following comments:

"A grand building does not make a great college. We are here to applaud and appraise an historic educational event.

"The truly magnificent new home of the fourth oldest school of pharmacy in America provides every basis for rejoicing. The design, the location, the equipment, the facilities of your building, are, in the language of Hollywood, 'stupendous, exciting, glorious, and almost unbelievable.'

"This building with its teaching facilities speaks for itself. In fact, any word description would be totally inadequate. In a slight paraphrase of Emerson, one might say: 'What it is thunders so loudly, I cannot hear what you say.'

"I first saw this building, in the very heart of the great University of Illinois Medical Center, just before the equipment was installed. As a native Washingtonian, who has spent some years in New York, I confess to a rather blasé attitude toward buildings, as such. But this structure, to house your highly respected College of Pharmacy, thrilled me even in its raw and noisy form. Today, equipped and functioning, Illinois pharmacy has a home which your President Lloyd Morey accurately describes as possessing ' . . .

physical facilities unsurpassed in the world, . . .' Here is the eloquence of evidence."

The building is unique in many respects. All laboratories, with a single exception, accommodate at least 100 students at a time, and afford complete vision in all areas of the room, unobstructed by pipes, pillars, or other utilities. In planning, the laboratories were designed to accommodate a variety of courses, thus reducing the cost of duplication in furniture and equipment.

All walls are movable, steel partitions, thus providing ready modification of the size of laboratories, offices, or classrooms.

The lighting is embedded, flush with the ceilings, and the sealed windows are installed horizontally, rather than vertically. All ventilation is established through the medium of filtered air, which eliminates the usual distress of smoke and dust.

Escalators, rather than elevators, afford a constant means of vertical transportation.

A complete manufacturing pilot plant adds materially to the value of training students at the graduate level and is in keeping with the marked advances in pharmaceutical research.

A retail laboratory, when complete with fixtures, stock, and other facilities, will provide the background for courses in pharmacy administration, which are designed to afford instruction to the undergraduate students, and through the medium of extension practices provide to the pharmacists of the state information relative to their daily problems in store operation.

Modern greenhouse facilities, utilizing artificial lighting and heat, provide the values of 24-hour sunlight for the growth and development of plant materials.

Facilities for at least 50 graduate students in the fields of chemistry, biology, and pharmacy are now available. These are in addition to the regular laboratories of each department, which are required for the undergraduate students.

Forty-three display cases have been installed in the corridors as an aid to visual education.

The total building, when completed, will provide an auditorium seating 800, four lecture rooms of 200 capacity each, staff offices for departmental personnel, and special research laboratories designed for staff use.

The building also illustrates the rare kind of economy that comes not from cheeseparing but from solutions that save still more than

their extra cost. At first glance, the quality and conveniences of the building appear extravagant. But every one of these features was proved out in dollars and cents as a money saver compared with the orthodox "economical" way of handling the same problem.

The 10 escalator units cost approximately \$250,000, the same as six 30-passenger, attendant-operated elevators: they are expected to save \$25,000 in annual operation and maintenance over six elevators. And the elevators would move less than one fifth as many passengers in the few minutes allowed for class-change time. The 10 escalators can move the entire student body in less than four minutes. It would take 45 22-passenger cars to do the equivalent job!

One of the most ingenious features is double-service air cooling. The five large lecture halls, one to a floor, have no exterior walls losing heat to outdoor air, thus require no heating of their own. When occupied, no matter what time of year, the lecture halls will need cooling to carry off excess body heat generated by occupants. During summer months, when students are away, the lecture-room cooling equipment will feed into an alternate set of ducts to cool staff offices. The entire building is mechanically ventilated from under-window heating units; complete cooling can be added in the future.

Only the crosspiece of the building's T and the manufacturing pilot plant is now built.

Construction cost for the portion completed was \$4,675,000; \$26.56 per sq. ft., not including \$505,000 for laboratory furniture but including fees.

Wherever possible, all stock- and preparation-room facilities were standardized and so located that a single common freight elevator or automatic conveyor would serve each from a central basement storage space. The furniture of the several laboratories was standardized wherever feasible, taking into consideration the specific requirements of the courses to be offered therein. For example, the biology laboratory on the third floor will accommodate seven different courses; the chemistry laboratories, with the exception of that used for physical chemistry, contain the same physical equipment, thus providing the opportunity to offer almost any course of the curriculum in any one of the laboratories. This feature provides for a greater percentage of use of the laboratory per week without diminishing its utility.

The equipment of the pharmacy laboratories is of such charac-

er as to permit the inclusion of all courses in that department in two laboratories, thus avoiding a marked increase in the cost of duplicated laboratory equipment.

The majority of the graduate laboratories are housed at one end of the fifth floor, away from undergraduate laboratories, in order to provide the students working therein a greater degree of privacy, and provide facilities which are specifically designed to meet the needs of the graduate student.

The physiology-pharmacology laboratory will accommodate 100 students with not more than four students being required to conduct a full series of animal experimentation. The laboratory is also equipped with an automatic gas-fired incinerator, which eliminates the storage of sacrificed animals until such time as they may be removed for incineration outside of the building.

A manufacturing pilot plant, occupying approximately 7,500 square feet of floor space, was maintained at ground level adjacent to the main building, in order to facilitate the handling of large quantities of raw materials, containers, and manufactured products which are transported to the hospital pharmacy dispensing unit through an underground tunnel.

The pilot plant is divided into five separate suites of rooms: receiving and bulk storage, including volatile liquids; ointment and liquid manufacture; allergen preparation; and two control laboratories, as well as an air-conditioned, temperature- and humidity-controlled tablet-manufacture department.

The staff offices are adjacent to these facilities, in order to effect a minimum of loss of time in supervision of the graduate students and employees working in the pilot plant.

The usual dry storage, cold storage, and washrooms are conveniently located on the first and basement floors of the pilot plant, and are large enough to accommodate the pharmaceutical requirements for not less than 300,000 patients per year.

The features designed for visual education are represented by the 43 display cases, most of which line the corridor of the first floor and the small foyers adjacent to the departmental laboratories. They are 14 inches in depth, and are approximately 4' x 4' in dimension. These are utilized by the students and staff to exhibit class exercises, material of historic significance, and new therapeutic agents.

The four classrooms of 200 each and the auditorium will be equipped with facilities for television and the projection of all types of visual aid usually employed in laboratory instruction. These have been established as permanent installations, in order that they may be ready for use at any moment. The lighting of these classrooms

is so designed as to permit the student to have clear observation of the projected material and at the same time take notes as the lecture proceeds. This was accomplished by a special type of inverted lighting installed in the lecture rooms.

The steel movable partitions, employed throughout the building, are a distinct departure from the traditional type of interior construction and have thus far proved to be most satisfactory, since they adapt themselves readily to the modification or expansion of room sizes, cabinet installations, and painting finishes, and, in the last analysis, furnish acoustical properties some 30 per cent more effective than plastered walls.

All air circulated throughout the entire building is electrostatically filtered, which greatly reduces the maintenance cost in securing a high quality of housekeeping.

Demineralized water, in place of distilled, is distributed through aluminum pipes, and, except for the preparation of parenteral solutions, is entirely adequate.

For the convenience of the readers who may wish to consider some of the values herein described, or displayed by the accompanying photographs, I am listing the following:

Architects:

Pace Associates  
53 W. Jackson Blvd.  
Chicago, Ill.

General Contractor:

Sumner S. Sollitt Co.  
307 N. Michigan Ave.  
Chicago, Ill.

Steel Partitions:

E. F. Hauserman Co.  
201 N. Wells St.  
Chicago, Ill.

General Laboratory

Furniture:

Sheldon Mfg. Co.  
Muskegon, Mich.

Prescription Units:

Reliance Cabinet Co.  
201 N. Elston Ave.  
Chicago, Ill.

Stainless Steel Sinks:

Elkay Mfg. Co.  
1874 S. 54th St.  
Cicero, Ill.

Demineralizer:

Barnstead Still Co.  
Forest Hills, Mass.

Office Furniture:

All-Steel Mfg. Co.  
Aurora, Ill.



FIG. 1. COLLEGE OF PHARMACY, UNIVERSITY OF ILLINOIS



FIG. 2. ESCALATORS AND FOYER, UNIVERSITY OF ILLINOIS

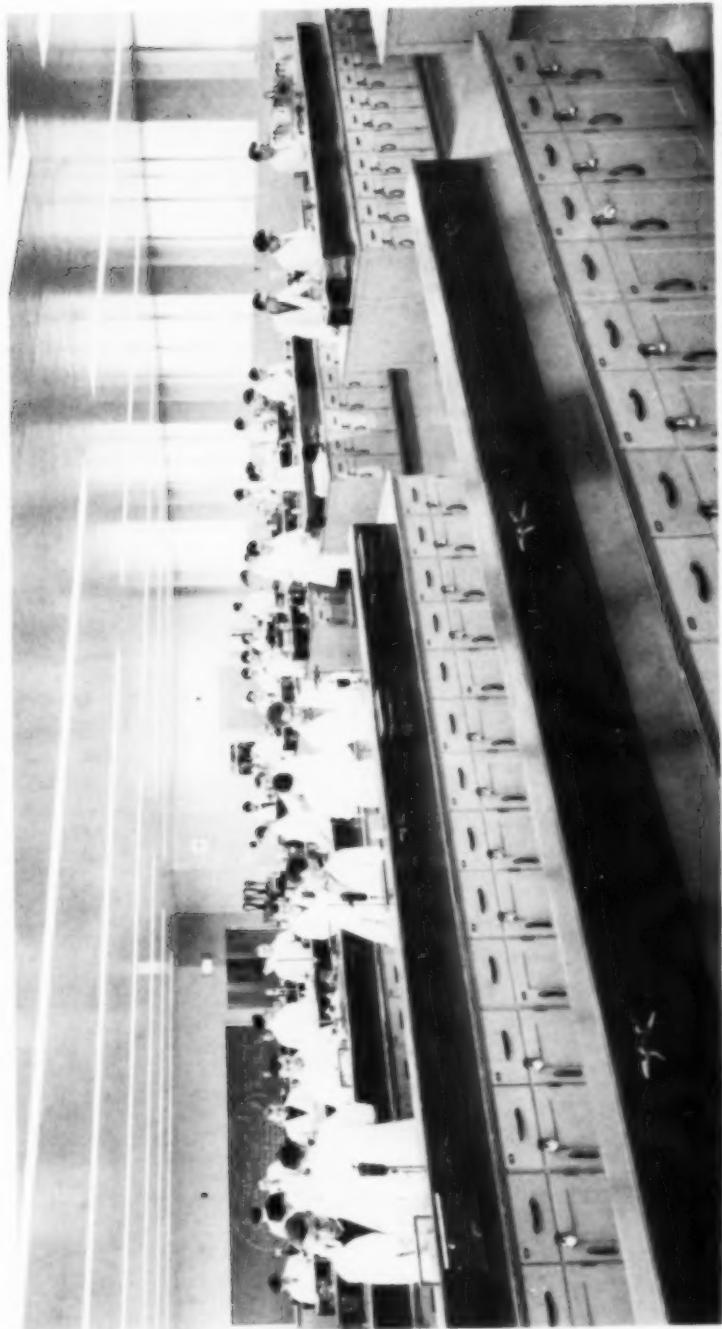


FIG. 3. FRESHMAN-SOPHMORE PHARMACY LABORATORY, UNIVERSITY OF ILLINOIS

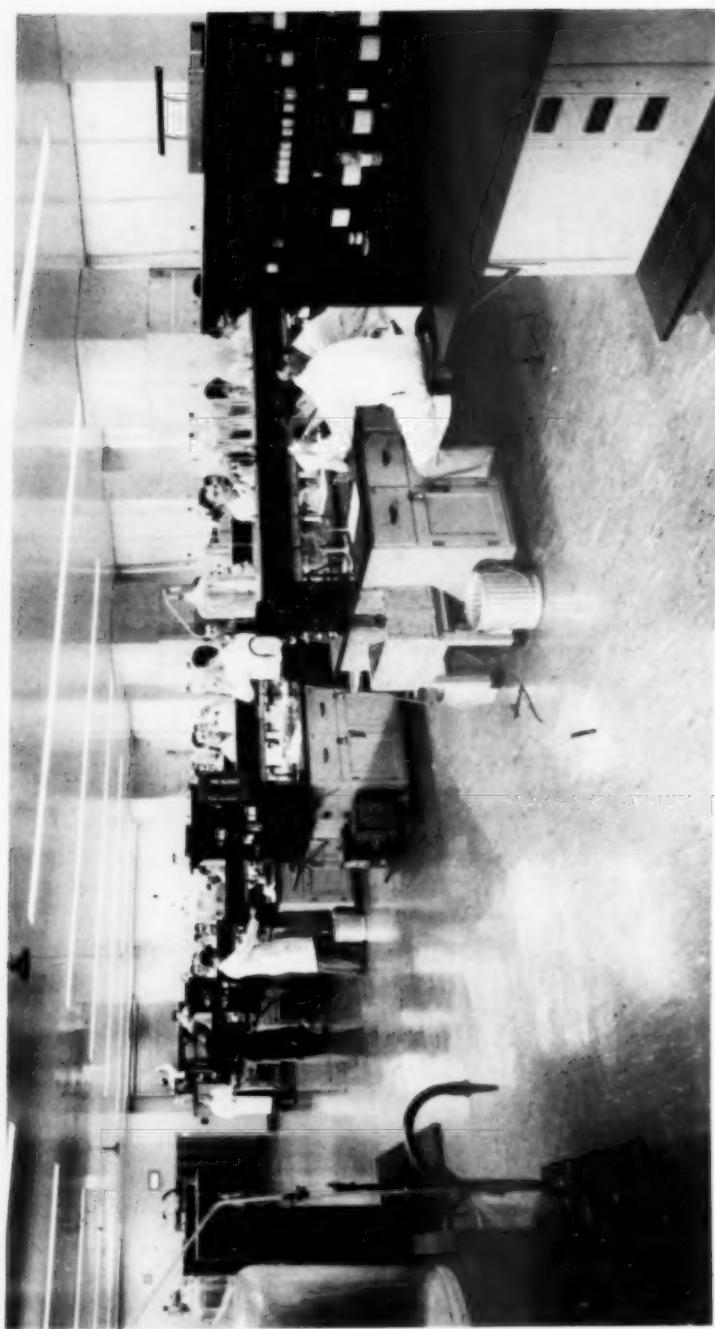


FIG. 4. ORGANIC CHEMISTRY LABORATORY, UNIVERSITY OF ILLINOIS



FIG. 5. BALANCE ROOM, UNIVERSITY OF ILLINOIS



FIG. 6. PHYSIOLOGY-PHARMACOLOGY LABORATORY, UNIVERSITY OF ILLINOIS

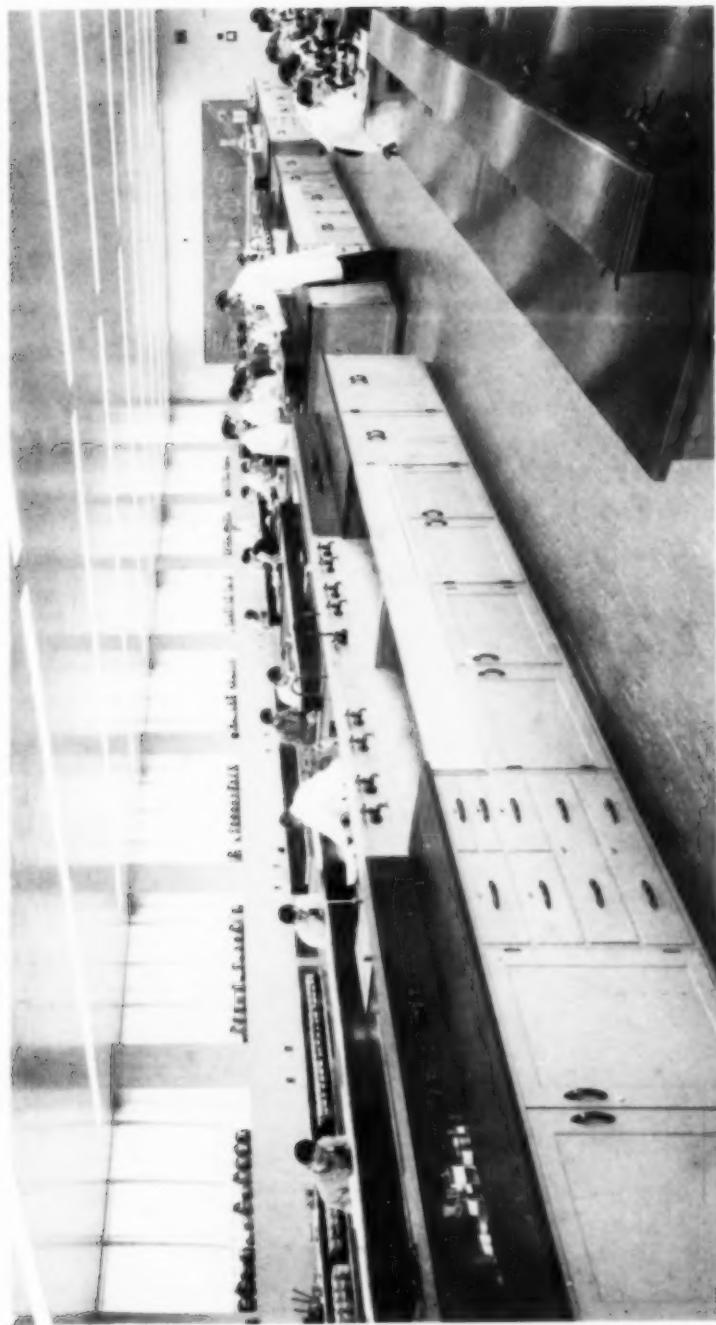


FIG. 7. BIOLOGICAL SCIENCES LABORATORY, UNIVERSITY OF ILLINOIS

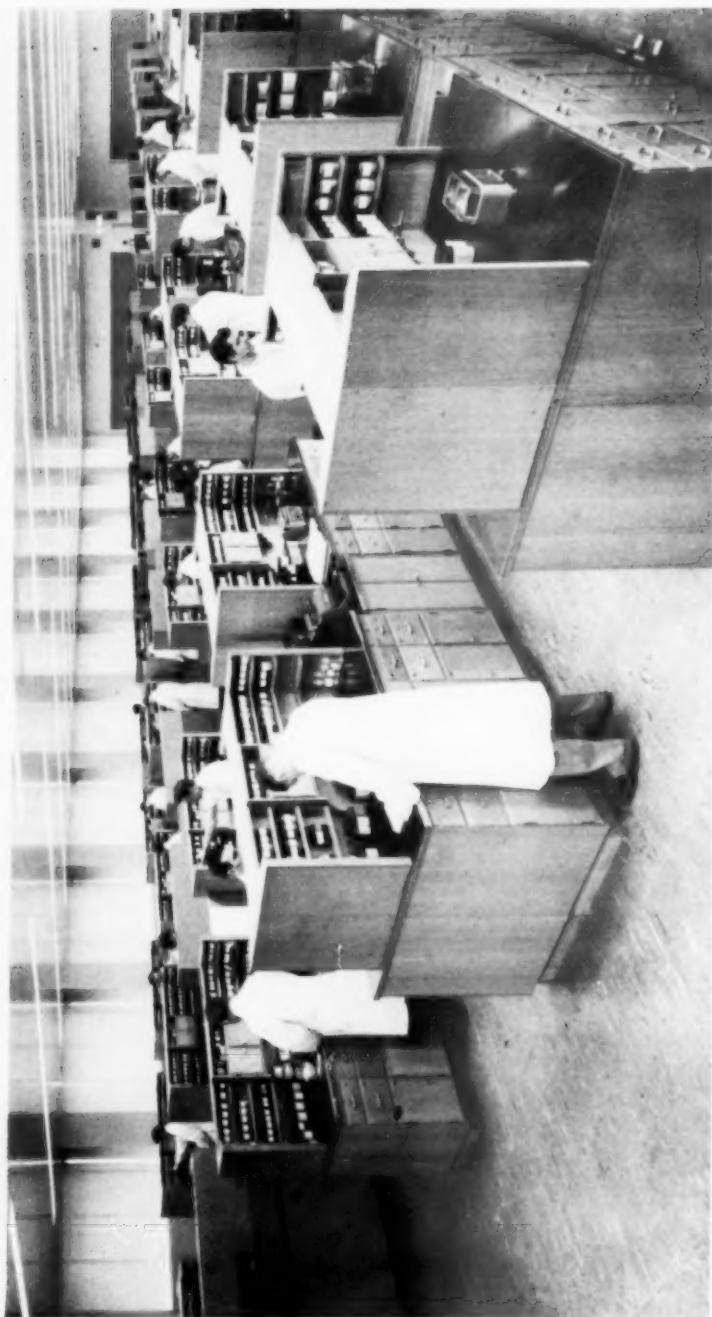


FIG. B. JUNIOR-SENIOR DISPENSING LABORATORY, UNIVERSITY OF ILLINOIS



FIG. 9. MANUFACTURING PHARMACY LABORATORIES, UNIVERSITY OF ILLINOIS



FIG. 10. FIRST FLOOR PLAN, UNIVERSITY OF ILLINOIS



FIG. 11. SECOND FLOOR PLAN, UNIVERSITY OF ILLINOIS



FIG. 12. THIRD FLOOR PLAN, UNIVERSITY OF ILLINOIS



FIG. 13. FOURTH FLOOR PLAN, UNIVERSITY OF ILLINOIS

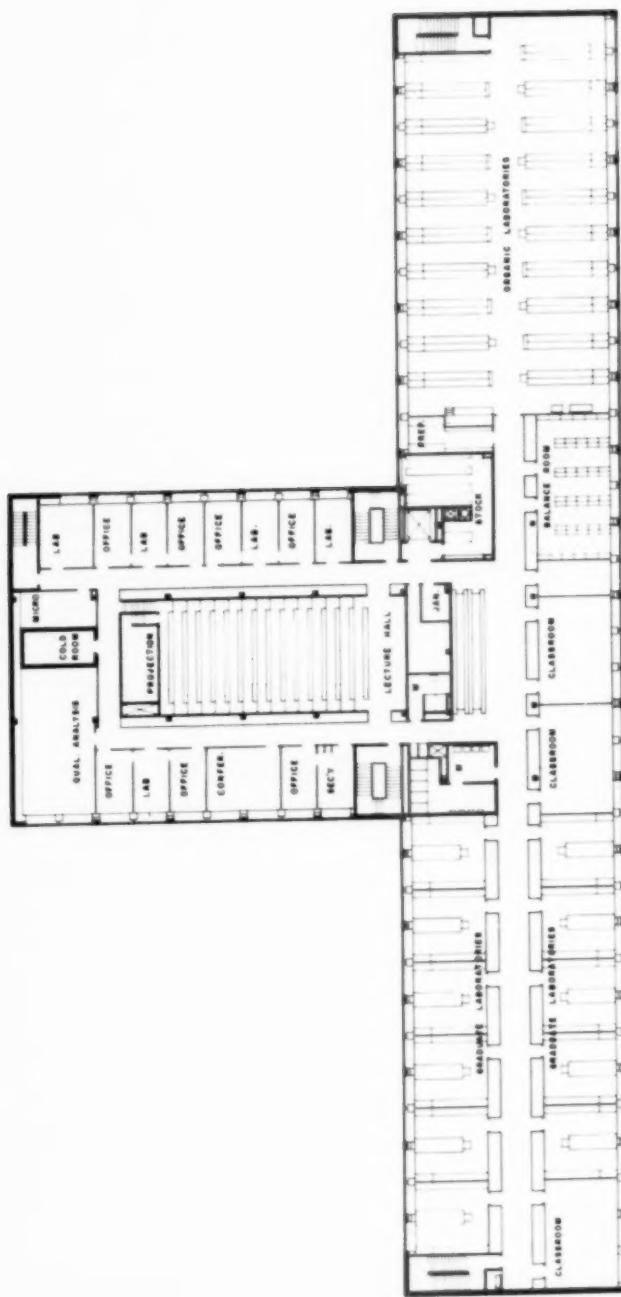


FIG. 14. FIFTH FLOOR PLAN, UNIVERSITY OF ILLINOIS

## NEW MEDICAL SCIENCES BUILDING

UNIVERSITY OF CALIFORNIA  
MEDICAL CENTER, SAN FRANCISCO

T. C. DANIELS

The Medical Center Campus of the University of California includes the Schools of Dentistry, Medicine, Nursing and Pharmacy, the Hooper Research Foundation, and the Out-patient Clinics and Hospitals. During the late spring of 1954, construction was completed on the first increment of a medical sciences building and a new 500-bed teaching hospital. The second increment of the sciences building is now under construction and is scheduled for completion in the early spring of 1958.

The Medical Sciences Building is a 14-story structure designed to house the Schools of Dentistry, Medicine, Nursing, and Pharmacy. It is constructed of reinforced concrete faced with ceramic tile. With the completion of the second increment, the first-year departments of instruction in the Medical School (anatomy, biochemistry, and physiology) will be transferred from the Berkeley Campus to the Medical Center, thereby consolidating the Medical School on the San Francisco Campus.

Instruction in the medical sciences is a highly integrated and coordinated activity on the San Francisco Campus, and a generalized description of physical facilities would be more or less meaningless unless consideration is first given to the over-all educational program at the Medical Center. First, it should be noted that each of the schools located on the San Francisco Campus has its own faculty and the same degree of autonomy in controlling and administering its respective educational program. However, in the interest of good pedagogy and economy of space and faculty, a policy was established requiring single departments of instruction for those disciplines common to all schools. We, therefore, have single departments of anatomy, biochemistry, microbiology, pathology, parasitology, pharmacology, and physiology. This does not mean that the same course of instruction necessarily applies to all students, but it does mean that two courses of instruction will not be offered normally where a single course can fully serve the needs of students in two or more schools. In this way, the tendency to proliferate a large number of courses of a descriptive nature and of questionable value is avoided. The policy tends to encourage the departments to consolidate their offering in terms of their respective disciplines and in a manner that leads to optimum educational

benefits for each professional group of students. To illustrate, students in dentistry and pharmacy share the same basic instruction in anatomy, biochemistry, microbiology, physiology, and public health. Students in pharmacy share with medical students the same instruction in pharmacology and toxicology.

The general facilities of the School of Pharmacy occupy four floors (8, 9, 10, and 11) in the first increment of the Medical Sciences Building. This is exclusive of lecture halls, space for storage of experimental animals, and laboratories for the pre-clinical sciences referred to above. There is a total of 34,000 net square feet of usable space on the four floors assigned to pharmacy. In addition to this, the School of Pharmacy's manufacturing laboratory is located in an adjacent building where it occupies 4,000 net square feet of space, and the pharmacognosy laboratory, which will eventually be housed in the second increment, is assigned to temporary space on the 13th floor.

#### GENERAL TEACHING LABORATORIES

Typical floor plans are shown in Figures 9 and 10. The School of Pharmacy's four floors in Increment I have a total of seven general laboratories for pharmacy, chemistry, and pharmaceutical chemistry. Two student laboratories are located on each of three floors (9, 10, and 11) and one on the 8th floor adjacent to the central storeroom as follows: general pharmacy, 8th floor; dispensing and product development, 9th floor; physical chemistry and analytical pharmaceutical chemistry, 10th floor; and organic and pharmaceutical chemistry on the 11th floor. An elevator ("dumb waiter") connects with a common service area to the two teaching laboratories located on each floor, thereby minimizing traffic to the storeroom.

All general student laboratories contain a minimum of 80 lockers and are designed to serve two sections of 40 students each. The teaching laboratories are all equipped with fume hoods, blackboards, steam-heated drying closets, steam tables, and special work areas as required. The student benches, with the exception of the dispensing laboratory, are equipped with steam outlets, vacuum lines, gas, water and electrical outlets. The student equipment lockers are designed to accommodate all student equipment including ring stands and tripods. In this way the student benches can be completely cleared of all glassware and equipment at the close of each laboratory period. This feature greatly facilitates the sectioning of laboratory instruction.

**MANUFACTURING LABORATORY**

The manufacturing laboratory is a teaching laboratory open to properly qualified students on an elective basis. Only students electing hospital pharmacy as a major in the undergraduate program or graduate students in hospital pharmacy are required to take instruction in this area. Facilities are available for the processing, manufacture, and control of standard pharmaceutical products, including tablets, tablet coating, powders, liquids (emulsions, suspensions, and solutions), and ointments. See Figures 6, 7, and 8.

**RESEARCH LABORATORIES**

Each member of the faculty is provided with a separate research laboratory and connecting office. In general, the instructor's laboratory and office are located on the same floor with the teaching laboratory for which he is responsible. Each of the research laboratories is equipped to serve the special needs of the staff member, and understandably this leads to considerable variation in the type of equipment and in the size of the laboratory. The average laboratory occupies approximately 200 square feet exclusive of the office, which varies from 80 to 150 square feet. To illustrate the nature of the research laboratories, it may be sufficient to indicate some of the areas of research in which there is an active interest. Among these should be mentioned: enzymatic studies on the mode of action of drugs; organic synthesis; physical chemistry; physical-organic chemistry; drug formulation and product development; tablet compression; polarography; chromatography; spectrophotometry; etc. In addition to the research laboratories for members of the staff, two general research laboratories are available for graduate students. One of these is designed to accommodate eight graduate students and the other offers facilities for 12. Space is also available for an additional 20 graduate students in the research laboratories assigned to members of the staff, thereby making accommodations available for a total of 40 graduate students for work leading to the M.S. and Ph.D. degrees.

**HOSPITAL PHARMACY**

The Hospital Pharmacy is operated as an income department by the University Hospital with the policy for operation established by a Special Pharmacy Committee made up of the Chief Hospital Pharmacist and representatives from the Schools of Pharmacy, Medicine, and Dentistry, including representatives from the various clinical specialties. The School of Pharmacy offers instruction in hospital pharmacy with internships and assistant resident appointments open to properly qualified students. The Pharmacy is located

on two floors in the Out-patient Clinic Building with connecting service windows to the out-patient area and hospital. The two floors of the Pharmacy are connected by a circular stair and a "dumb waiter." The lower floor is used for the preparation and distribution of ward medication and the top floor for dispensing to patients. The Pharmacy is connected with the new teaching hospital by a pneumatic tube system serving the nurses' station on each floor level of the hospital. It is responsible for the manufacture, control, and distribution of all parenteral solutions used in the hospital and operates a separate facility located in the Moffitt Hospital for this purpose. Figure 4 shows a view of the Hospital Pharmacy.

#### SPECIAL LABORATORIES AND FACILITIES

A number of special laboratories and common-use areas are included in the building plans for the School of Pharmacy. In this group are laboratories for specialized instruction, facilities to serve all laboratories, and specialized equipment available for use as required, but normally not on a continuous basis, by members of the faculty and graduate students. The latter serves the dual function of minimizing space requirements for a relatively large staff and the needless duplication of costly equipment. Following in this general category are:

- 1) Ice room, equipped with an automatic chipped ice machine and storage facilities for dry ice. The automatic ice machine is operated at night by the janitorial service which is responsible for filling insulated stainless steel ice carts and delivering them to their stations in the laboratories as required.
- 2) Two refrigerated rooms for low-temperature work and storage.
- 3) Two incubator rooms.
- 4) Two constant-temperature rooms.
- 5) Distillation room for high-vacuum distillations. This room is equipped with distillation assemblies of varying capacity including a rotating plate "molecular still."
- 6) High-pressure room for chemical autoclaves, catalytic reductions, etc.
- 7) Chromatography and counter-current extraction room.
- 8) Pyrogen-testing room for teaching and routine pyrogen tests on parenteral solutions used in the Hospital.
- 9) Parenteral-solutions room. This area is equipped for the preparation, sterilization, lyophilization, and filling of parenteral formulations.

- 10) Microbiological laboratory for screening compounds for bactericidal or fungicidal activity.
- 11) Radioactivity-measurement room.
- 12) Physical-measurements room for the assembly of special apparatus required for the study of physical properties of solutions such as dipole moments, conductivity, electrophoresis, surface and interfacial tensions, etc.
- 13) Spectrographic laboratory. This rather extensive facility is fully equipped with recording ultraviolet and infra-red spectrographs, together with quartz and grating-type instruments for emission spectroscopy. It serves the entire Medical Center for all but routine spectrographic measurements.
- 14) Shop. This is operated for the maintenance and repair of laboratory equipment. Development and construction of specialized equipment is the function of a central campus facility designated as the Research and Development Laboratory.
- 15) Conference room for meetings of the staff and faculty committees.
- 16) A special room adjoining the dispensing laboratory for the display and teaching of proprietary medication in terms of therapeutic use.

The first increment of the Medical Sciences Building has only three classrooms, two of which are being used on an interim basis until the completion of the second increment. Most of the classrooms are located in buildings that are connected to the Medical Sciences Building and are scheduled for classes in all schools.

#### CENTRAL FACILITIES

In addition to the areas specifically assigned to Pharmacy, there are a number of centralized activities that serve students and faculties of all schools. Reference had been made to the Research and Development Laboratory which falls in this category. The Radioactivity Center is another special laboratory serving all schools. The same is true of the Medical Center Library and the Audio-Visual Center, both of which are responsible for serving campus needs.

In addition to the facilities listed above, the School of Pharmacy will acquire some additional space in the second increment of the Medical Sciences Building as follows:

- 1) Space for experimental laboratory animals.

- 2) Joint-use teaching laboratory to be shared with biochemistry for the teaching of analytical chemistry and analytical pharmaceutical chemistry.
- 3) Joint-use laboratory to be shared with parasitology for the teaching of pharmacognosy.
- 4) Additional office space for administration.

The facilities I have described provide for our current needs in pharmaceutical education in a most satisfactory manner. We could make use of additional space to good advantage, and the same is true of the other schools. Our present deficiencies are not serious and can be corrected by the acquisition of additional space in the Medical Sciences Building when it is expanded into the third and fourth increments.

---

*... extend your professional training and influence for the betterment of your neighbor's philosophy and thinking on life as well as for the improvement of his health. In its broadest sense, a profession is a ministry—and true pharmacy is no exception. Accept this concept of your profession and apply it in your daily life, and you will always have the answer as to how to act, what to think, and what to do under the many and varying circumstances presented to us today as well as in the future. This is an obligation as well as a responsibility of your professional status.*

F. Royce Franzoni, in an address to the graduating class of Albany College of Pharmacy, June, 1954. Mr. Franzoni was then President of the American Pharmaceutical Association.



FIG. 1. ARCHITECT'S DRAWING OF THE MEDICAL SCIENCES BUILDING AND MOFFIT HOSPITAL,  
UNIVERSITY OF CALIFORNIA



FIG. 2. GENERAL PHARMACY LABORATORY, UNIVERSITY OF CALIFORNIA



FIG. 3. DISPENSING LABORATORY, UNIVERSITY OF CALIFORNIA



FIG. 4. OUT-PATIENT DISPENSING AREA OF THE HOSPITAL PHARMACY, UNIVERSITY OF CALIFORNIA



FIG. 5. PRODUCT DEVELOPMENT LABORATORY, UNIVERSITY OF CALIFORNIA

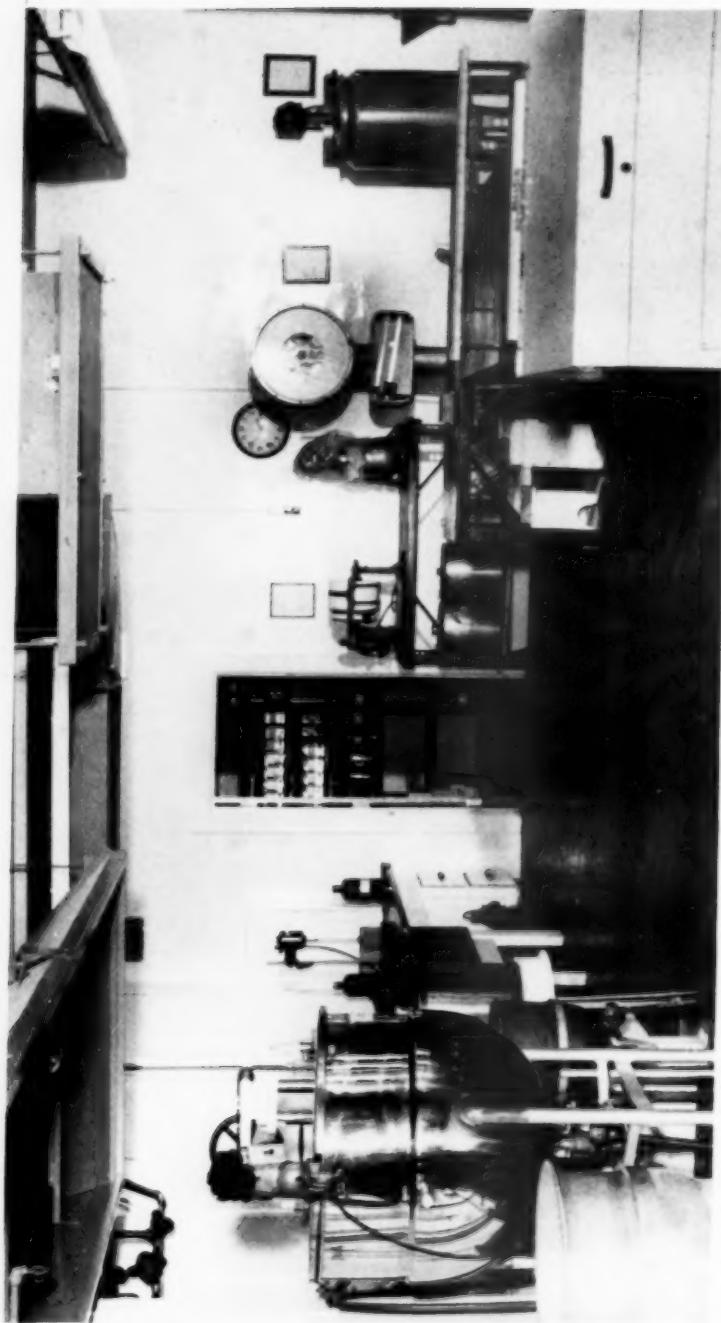


FIG. 6. OINTMENT SECTION OF MANUFACTURING LABORATORY, UNIVERSITY OF CALIFORNIA

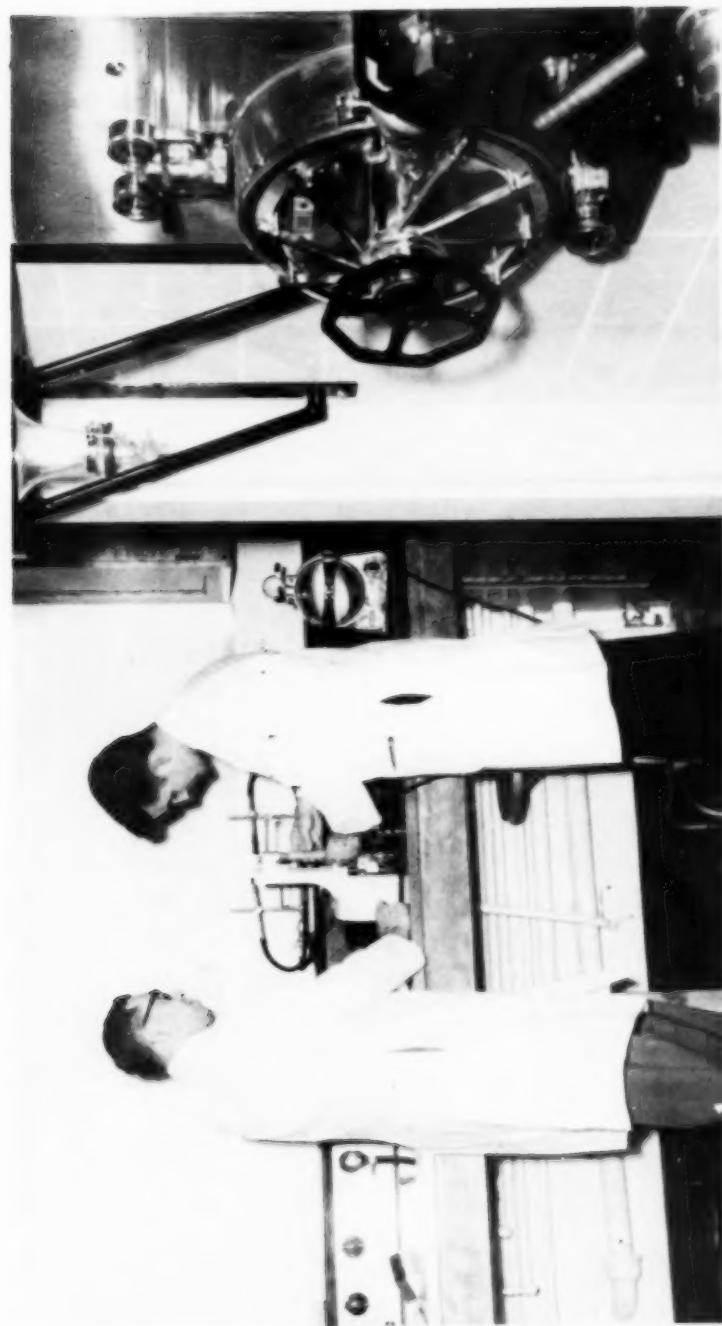


FIG. 7. PARENTERAL SOLUTION ROOM, UNIVERSITY OF CALIFORNIA

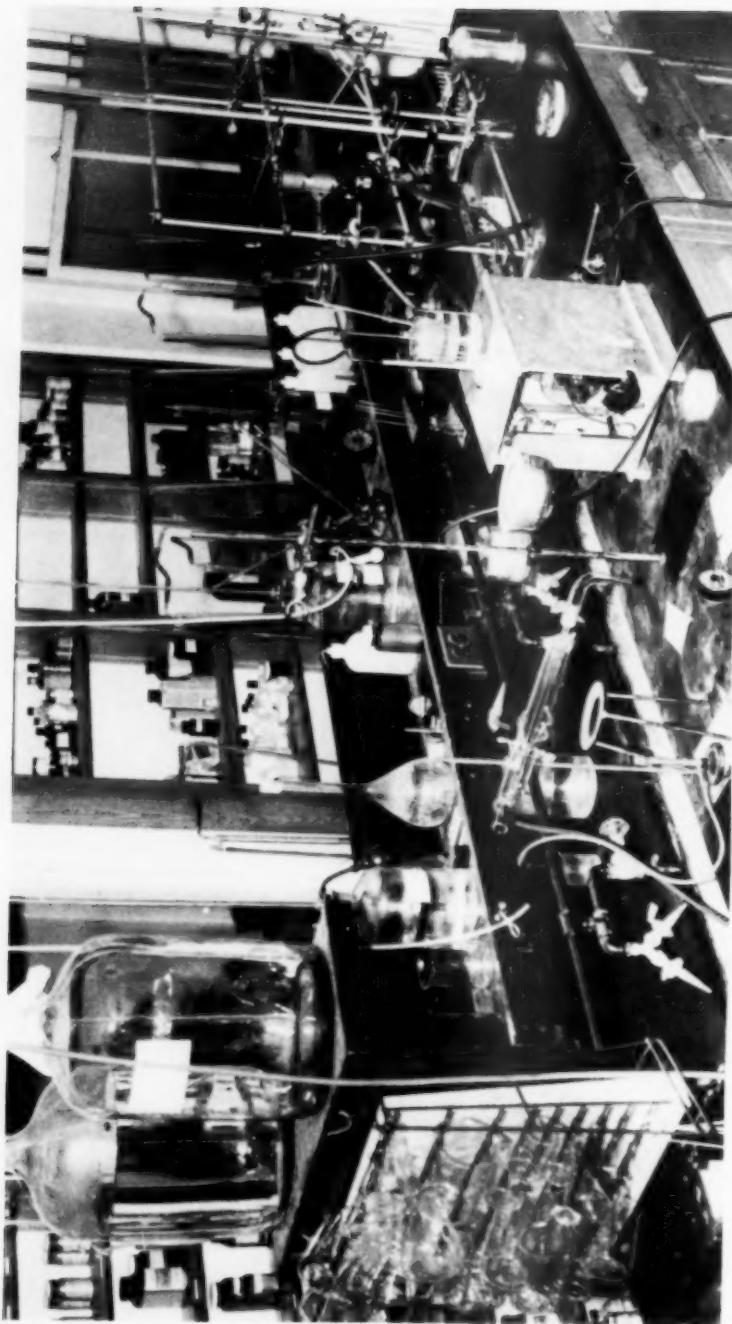


FIG. 8. CONTROL ROOM OF MANUFACTURING LABORATORY, UNIVERSITY OF CALIFORNIA

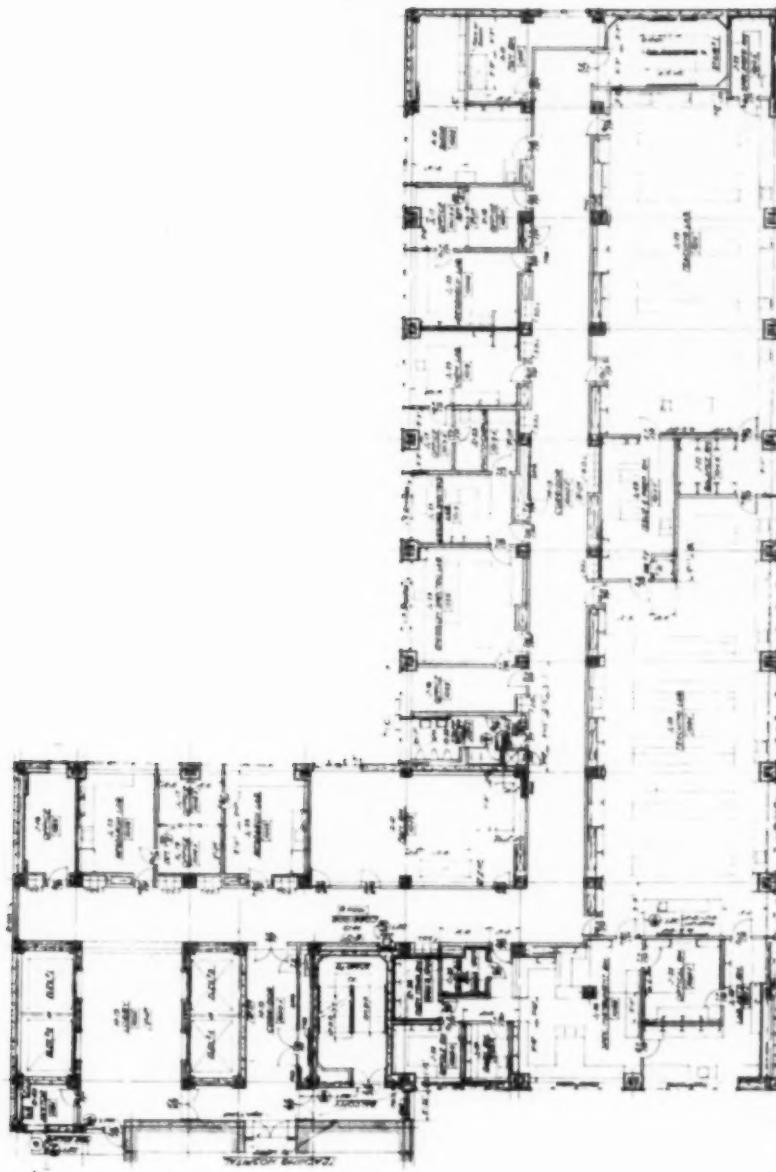


FIG. 9. NINTH FLOOR PLAN OF THE MEDICAL SCIENCES BUILDING, UNIVERSITY OF CALIFORNIA

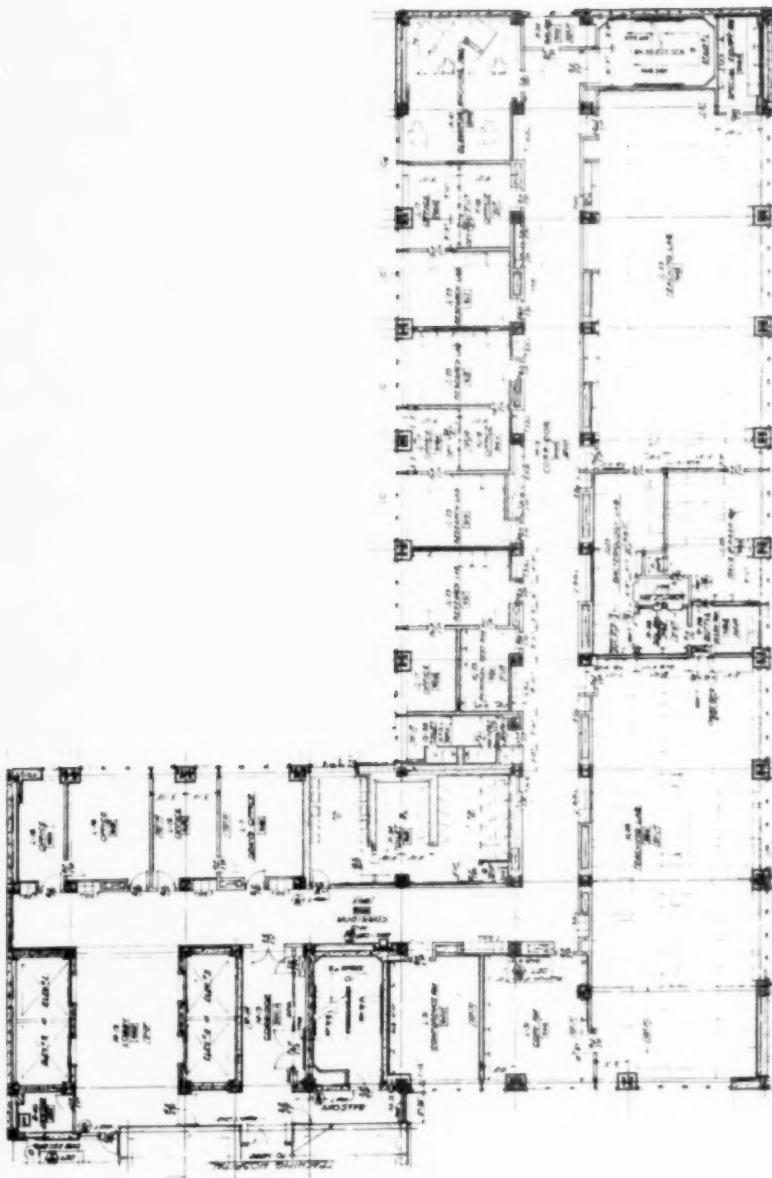


FIG. 10. TENTH FLOOR PLAN OF THE MEDICAL SCIENCES BUILDING, UNIVERSITY OF CALIFORNIA

## DRAKE'S FITCH HALL OF PHARMACY

BYRL E. BENTON

Fitch Hall of Pharmacy at Drake University was completed in 1949 at an estimated cost of \$400,000 including laboratory furniture. The architects for the building were Saarinen, Swanson and Saarinen of Michigan, and Brooks-Borg of Des Moines, Iowa. Designed on the principle that university funds should be used to the limit in making education available to all possible applicants, the building contains no architectural elements which are costly, nonproductive, or purely decorative. The building is beautifully proportioned, yet truly functional. Planned and built at the same time as the Harvey Ingham Hall of Science, the two buildings operate as a unit for pharmacy students. Basic sciences such as chemistry, biology, physics, and mathematics are taught in the science building while the professional courses are taught in the pharmacy building. A 74-foot glass-enclosed overpass connects the two buildings and welds them together as a unit. Fitch Hall has two stories, is 46 feet by 142 feet, and is set at a right angle to the Science Hall to form an L.

The exterior of the building is of common brick on two sides and steel grid with glass and prefabricated spandrels on the other two sides. The interior is finished in brick on outside walls and plaster on all inside partitions in classrooms and laboratories. Liberal use has been made of tile and plywood walls in the halls and offices. The halls, classrooms, and offices are floored with asphalt tile, while the laboratory floors are concrete. Acoustic tile has been used on the ceilings in classrooms, halls, and offices. The laboratory ceilings were left unfinished; however, the porous material used resembles acoustic tile and has good sound-deadening qualities. With glass walls on two sides of the building, there is a great amount of natural light besides fluorescent lighting in rooms.

The clean lines of the building and the use of tile walls in the halls make for easy maintenance. A spacious entrance and lobby and an open stairway to the second floor make the building appear larger than it actually is.

Fitch Hall has three classrooms, which include a lecture room on the first floor, seating 100 students; and two classrooms on the second floor, each seating 50 students. The north wall of the lecture room (see Figure 4) is glass, and all other walls are of common brick. Paneling on the south wall juts out to form a small storage room for demonstration material in the upper right-hand corner of the room. A lecture-demonstration table at the front of

the room is equipped with gas, hot and cold water, and electricity. A permanent white board serves a dual purpose as a screen for picture projection, and as a writing surface on which black grease pencils are used—the marks of which are easily removed with a damp cloth. The acoustics in the room are practically perfect, and voice amplification is never needed. All classrooms have draw drapes which enable the rooms to be darkened for picture projection.

Pharmacy staff offices occupy one side of the second floor. Each office has a laboratory bench equipped with the usual utilities. The office space is small but compactly arranged.

Each laboratory was designed with the idea that it must serve a dual purpose or be used sufficiently to warrant special design for one course. The physiology-pharmacology laboratory on the first floor is an excellent example. An animal room and other equipment in common are needed for each course. Even though physiology is staffed by the biology department of the College of Liberal Arts and pharmacology by the College of Pharmacy, the joint laboratory has worked out to the mutual advantage of all concerned and has cut down much unnecessary duplication of equipment. In addition the department of psychology utilizes the laboratory for a class in experimental psychology in which animals are regularly used.

The second laboratory on the first floor is equipped with the usual type of desk found in most basic chemistry laboratories. It is utilized for classes in pharmaceutical preparations, fundamental principles of pharmacy, biochemistry, and cosmetics. A stock room between the laboratories on the first floor serves for both. A small laboratory adjacent to the stock room serves as a research laboratory and as a preparation room for both laboratories.

A seminar room to the right of the main entrance seats 15 students and serves as a small classroom, a space for discussion groups, and as a reading room for students when not otherwise occupied.

The dispensing laboratory on the second floor is the only one which has been designed exclusively for a single purpose. The desks were modified from a plan originated by Dean E. R. Serles of the University of Illinois and were custom-made in Des Moines. They are of solid oak and are finished in limed oak. The utilities on each desk include gas and electricity. A work bench at one end of the laboratory has gas, electricity, vacuum, and air outlets. In addition a 12-hole water bath is provided on the bench. Each of the four laboratories in the building has this arrangement. One wall of the laboratory has built-in cabinets with glass doors which serve as display cases for manufacturers' specialties. The laboratory is serv-

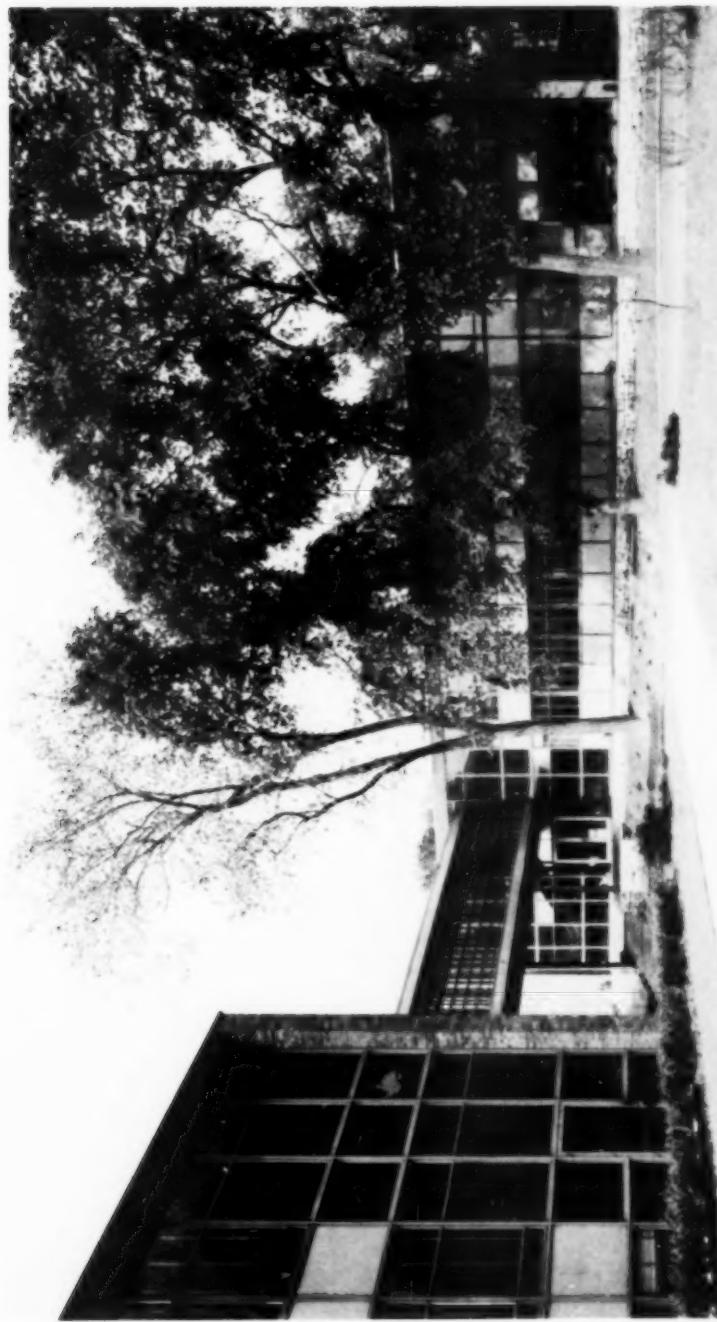


FIG. 1. OUTSIDE VIEW OF FITCH HALL OF PHARMACY SHOWING THE OVERPASS, DRAKE UNIVERSITY



FIG. 2. HARVEY INGHAM HALL OF SCIENCE ADJOINING FITCH HALL OF PHARMACY, DRAKE UNIVERSITY



FIG. 3. LOBBY VIEW, DRAKE UNIVERSITY

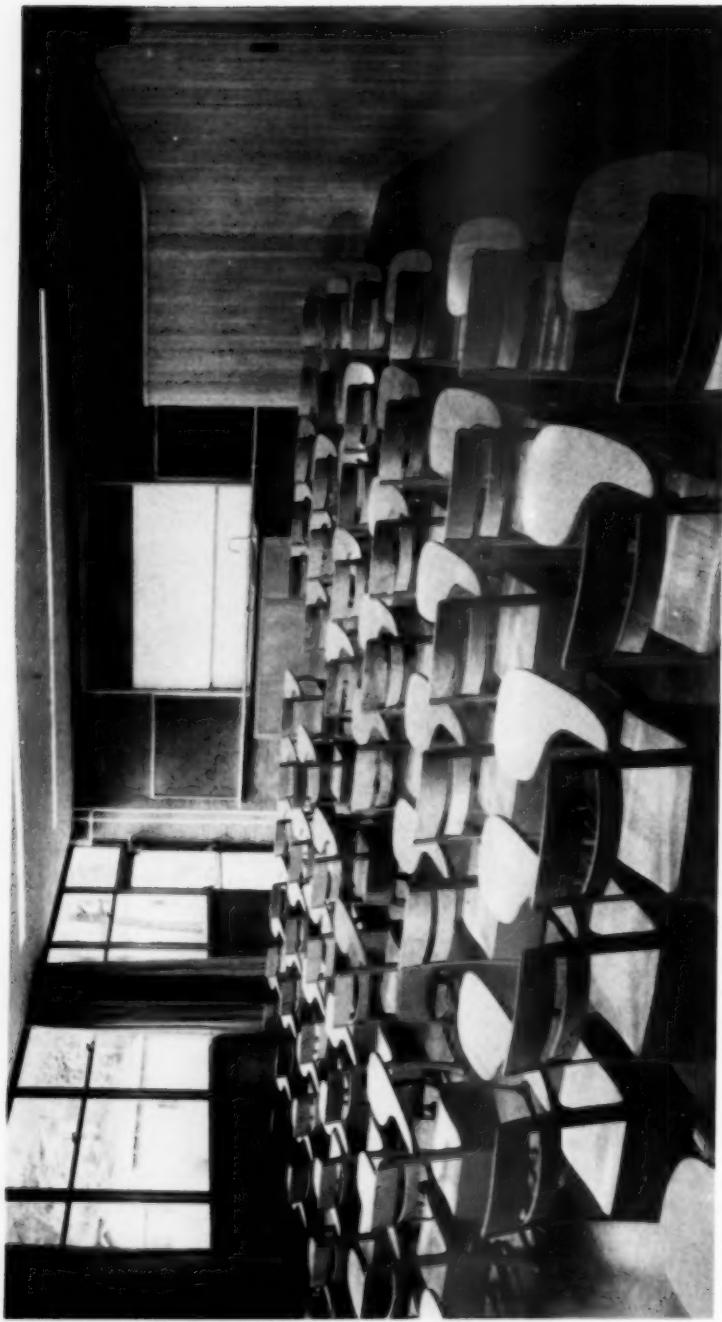


FIG. 4. INTERIOR VIEW OF THE LECTURE HALL ON THE FIRST FLOOR, DRAKE UNIVERSITY

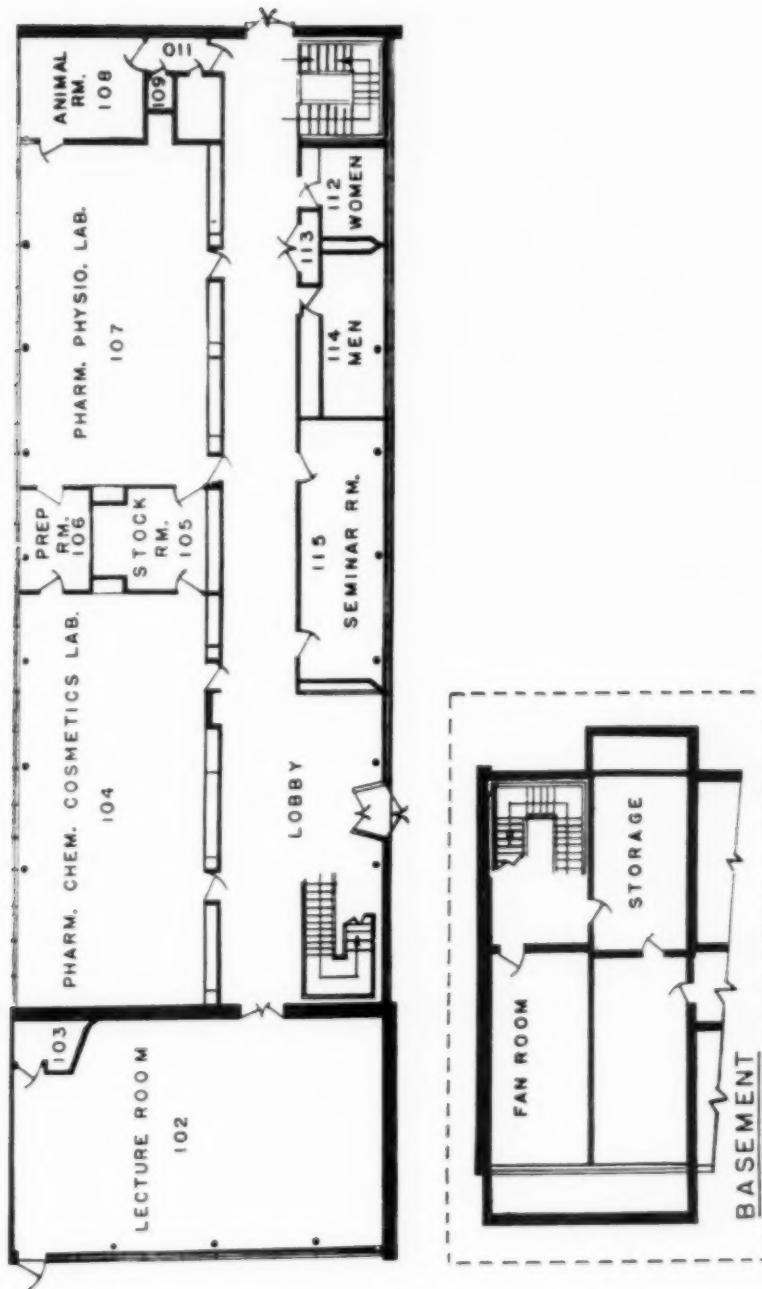


FIG. 5. FIRST AND BASEMENT FLOOR PLANS, DRAKE UNIVERSITY

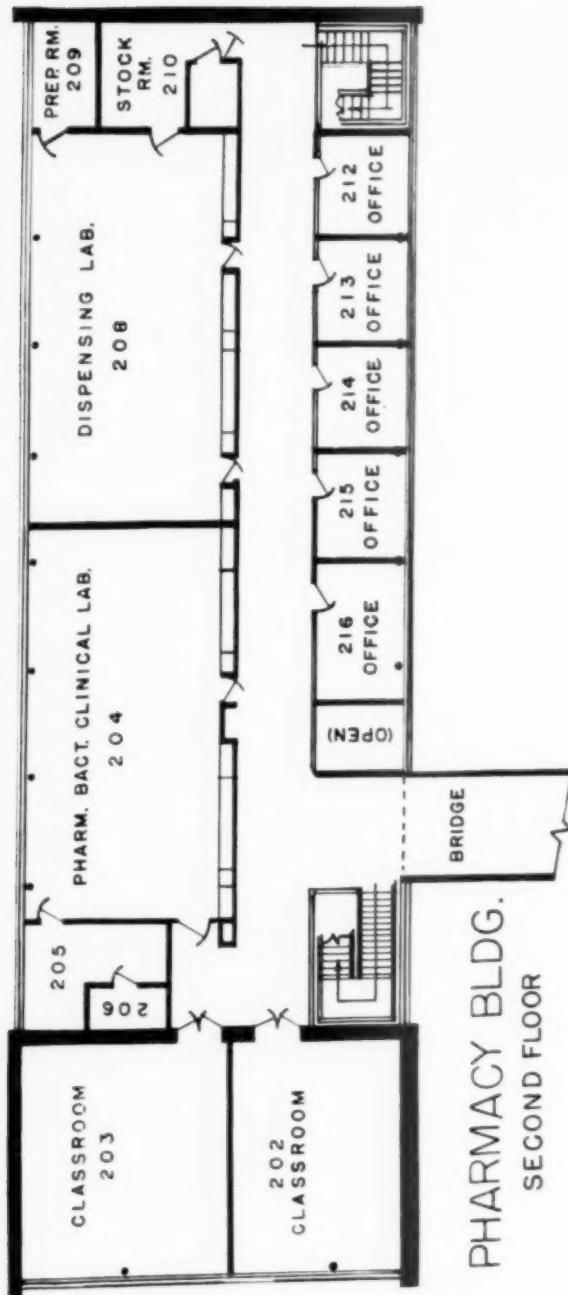


FIG. 6. SECOND FLOOR PLAN, DRAKE UNIVERSITY



FIG. 7. ANIMAL ROOM, DRAKE UNIVERSITY



FIG. B. GENERAL PHARMACY AND BIOCHEMISTRY LABORATORY, DRAKE UNIVERSITY

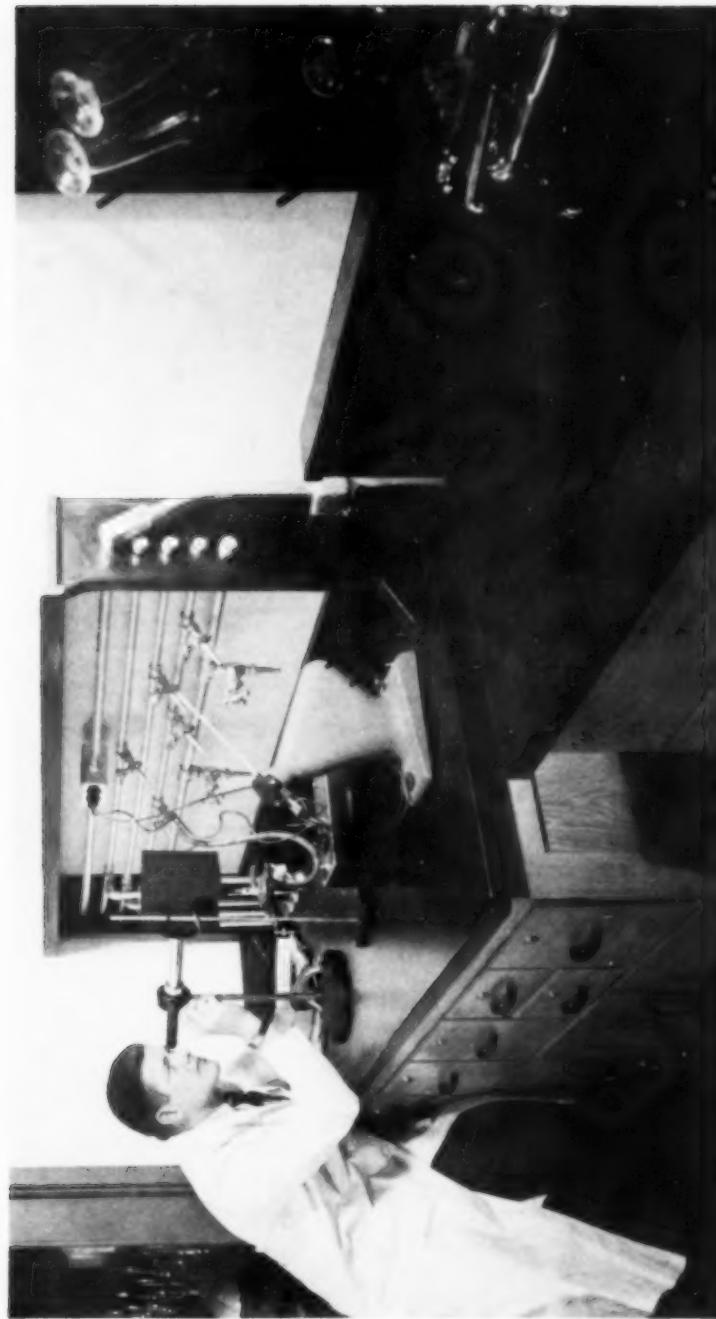


FIG. 9. THE PREPARATION ROOM-RESEARCH LABORATORY ON THE FIRST FLOOR WITH THE PHARMACOLOGY LABORATORY IN THE BACKGROUND, DRAKE UNIVERSITY

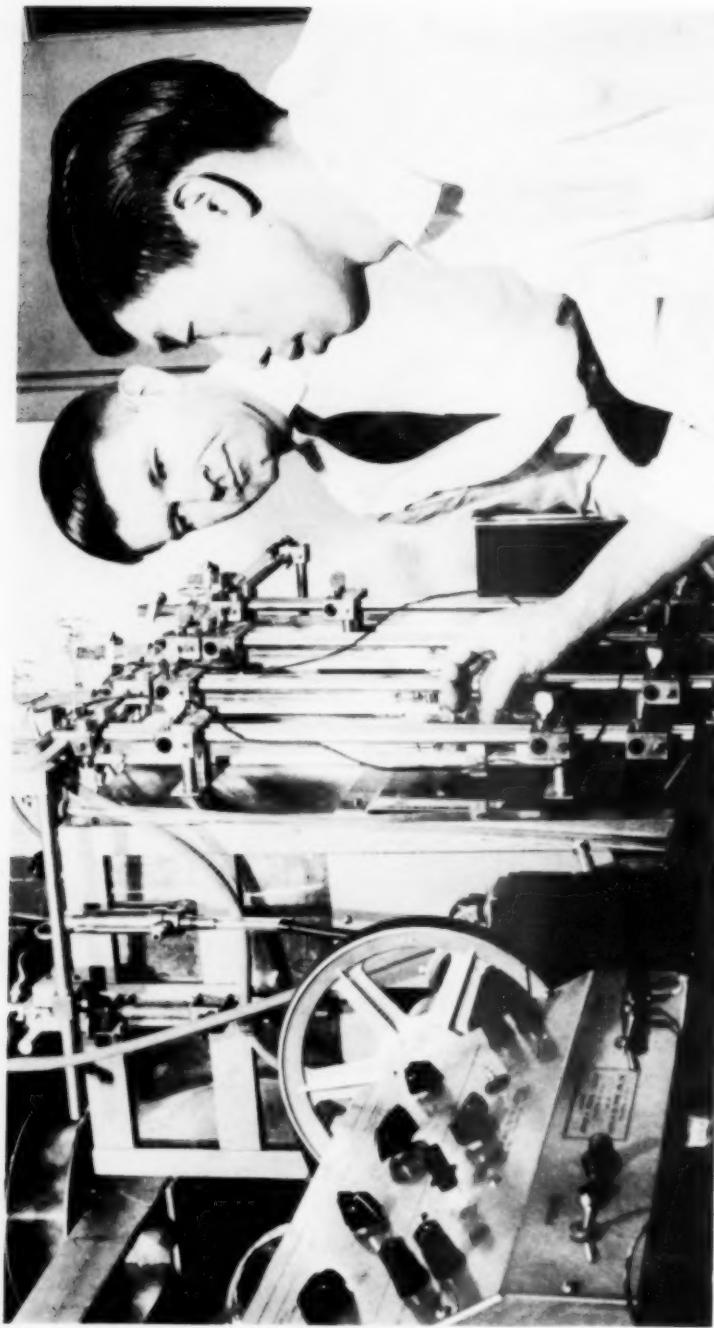


FIG. 10. EQUIPMENT IN THE FIRST FLOOR RESEARCH LABORATORY, DRAKE UNIVERSITY



FIG. 11. DISPENSING LABORATORY DESK WITH THE PROPRIETARY MEDICINE SECTION IN THE BACK-GROUND, DRAKE UNIVERSITY



FIG. 12. CLASSROOM ON THE SECOND FLOOR, DRAKE UNIVERSITY

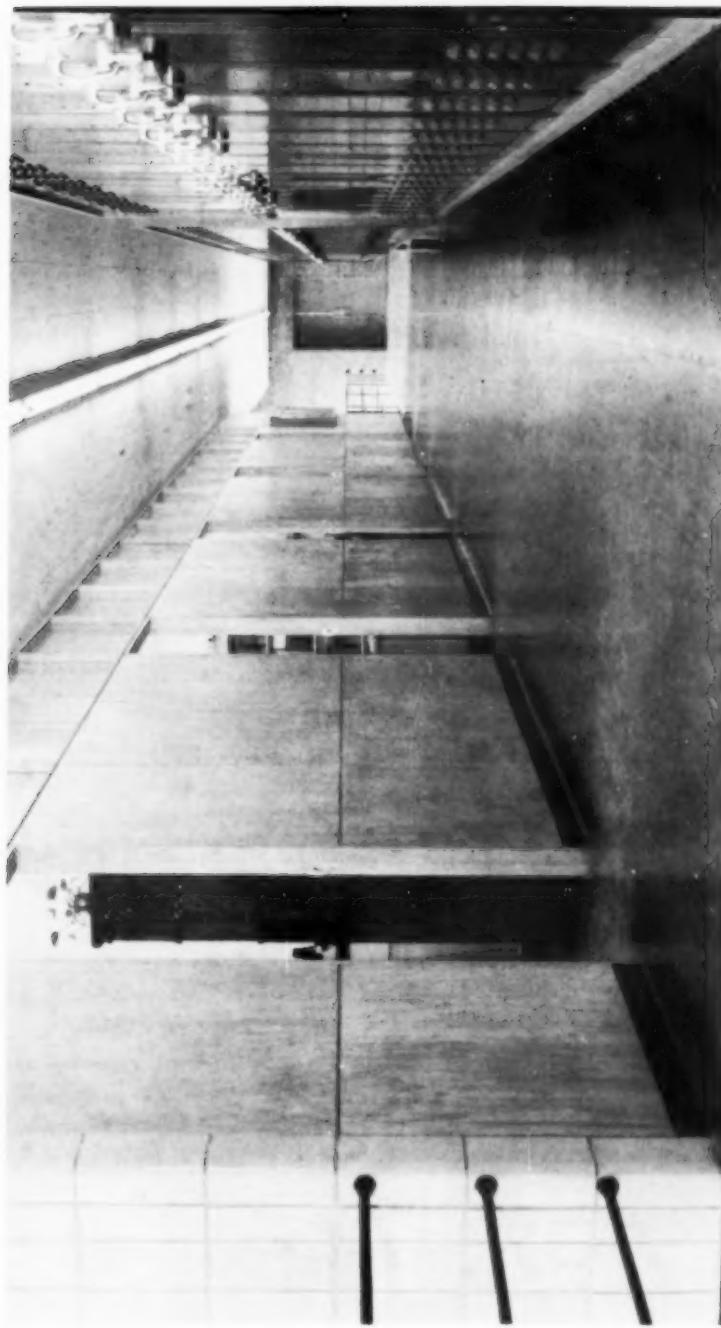


FIG. 13. SECOND FLOOR HALL SHOWING OFFICES OPENING FROM THE HALL, DRAKE UNIVERSITY

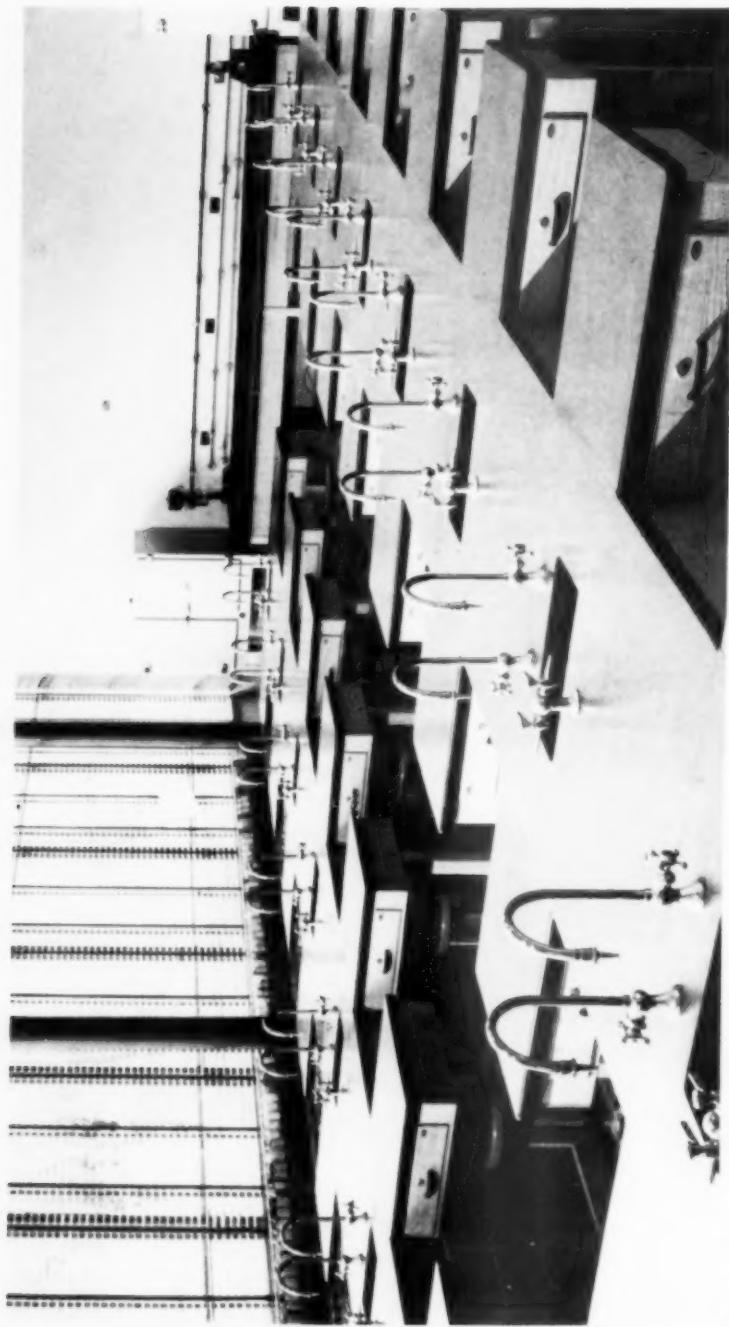


FIG. 14. PHARMACOLOGY-MICROBIOLOGY LABORATORY ON THE SECOND FLOOR, DRAKE UNIVERSITY

ed by a separate stock room and a preparation room which also serves as a research laboratory. A stone sink is provided in a recessed space at each end of the laboratory. All laboratories in the building have running distilled water, and each stock room is provided with sink, hot and cold water, distilled water, and gas outlets.

The other laboratory on the second floor was designed for pharmacognosy and bacteriology. Both courses need microscopes and tables designed for microscopic work. The addition of an autoclave, dry-heat sterilizers, and incubators is all that is needed to make the laboratory serve both purposes. The laboratory desks were designed to allow for maximum space for each student; therefore, the U-shaped bench was adopted. A spacious combination preparation and stock room enables technicians to prepare media and wash glassware for the bacteriology laboratory. In addition a small sterile transfer room opens off of the preparation room. This room has filtered air and is sterilized by ultraviolet lamps.

All of the laboratories have storage cabinets along one wall. While the over-all storage space is limited it has been an advantage in that buying of supplies is more carefully done, and the keeping of obsolete equipment and old drug stocks cannot be tolerated. The building was made possible through a gift from Fred W. Fitch and was dedicated in the spring of 1949. During the seven years it has been in operation it has proved to be a very versatile building requiring a minimum of maintenance. Visitors are frequently surprised to find that the building is seven years old.

---

*. . . in the summer . . . I would prefer to have a teacher of mine go into his laboratory and do something that he had never done before, or go to the north woods and revel in the beauties of nature and refresh his soul by communion with his Creator. He would come back full of vigor, an inspired teacher, capable of rendering a finer service to his pupils and his institution.*

Rufus A. Lyman, Am. J. Pharm. Ed., 4, 622 (1940)

## THE FACILITIES OF THE COLLEGE OF PHARMACY OF THE UNIVERSITY OF TEXAS

HENRY M. BURLAGE AND WILLIAM R. LLOYD

The prestige of the College of Pharmacy was greatly enhanced on the campus of the University of Texas when it occupied new quarters in September, 1952. The Pharmacy Building is a completely air-conditioned, fireproof structure of Spanish Renaissance architecture of variegated brick, and is solely devoted to instruction and research in the recognized divisions of pharmacy. The building (Figure 1) is located in close proximity to the Student Health Center, the gigantic Experimental Science Building, and the Chemistry, Physics and Biology Buildings—which house the four basic sciences required in the pharmaceutical curriculum.

Special features throughout the building are:

- (1) air conditioning throughout all rooms,
- (2) seven-foot wainscoting and glazed structural tile of light buff or special greens in laboratories and hallways. (Some laboratory rooms have this glazed tile from floor to ceiling. This type of construction provides for easy cleaning of walls and eliminates expensive periodic painting with its attendant nuisances.),
- (3) acoustical ceilings to decrease noise throughout the building,
- (4) ample illumination by natural light, although all space is abundantly lighted by means of fluorescent lights of modern design,
- (5) approximately 500 clothes lockers installed in the hallways and available to students on a no-cost basis,
- (6) ten large display cases lighted by "cold" light located on the first, second, and third floors. (These are available for educational and commercial displays and are installed by students in courses or by the professional organizations.),
- (7) a freight elevator from the ground floor to the fourth floor,
- (8) a large incinerator capable of burning all refuse and animal carcasses,
- (9) bulletin boards and directories on each floor of the building,
- (10) all laboratories provided with one or more hoods and with utilities such as steam, hot and cold water, air, electricity, and aspirators.

**THE GROUND FLOOR**

On this floor is located a drug-grinding and distillation room, a machine shop, a men's lounge, two manufacturing pharmacy laboratories (Figure 2) provided with \$32,000 worth of equipment, a control laboratory for preparations produced in the manufacturing laboratory, a parenteral solution room, a storeroom for manufactured products, a main storeroom and storekeeper's office, a pharmacy research laboratory for four to eight graduate students, and the offices of the Director of Pharmacy Extension Services and of three members of the pharmacy staff. Two outside entrances lead onto this floor.

**THE FIRST FLOOR**

Three main entrances lead onto this floor. Space on this floor is allotted to the administrative offices, an auxiliary storeroom, the eighty-seat College Library (Figure 3) which is manned by a staff selected by the University Librarian and is generally open from 9 A.M. to 9 P.M., a lecture room for forty students, a research laboratory (two students), a women's lounge, a laboratory (sixteen students) for animal health pharmacy and/or cosmetology, a conference or seminar room provided with cooking facilities for entertainment purposes (Figure 4) used by the organizations of the College, and the dispensing laboratory (108 students) (Figure 5).

**THE SECOND FLOOR**

This is the floor of greatest activity during the day since it houses some of the laboratories for pharmacy (3) and pharmaceutical chemistry (2). For the greatest utilization of laboratory space, three pharmacy laboratories are connected by two rolling metal doors which permit the formation of one large laboratory or two smaller laboratories (Figure 6). Two of the pharmaceutical laboratories are provided with side lockers for equipment which can be moved to the lab desks and thus provide greater utilization of expensive laboratory desks. There is also a men's lounge on this floor. There is one large laboratory (120 desks) for pharmaceutical chemistry, a balance room with cork linoleum to reduce breakage, a quantitative pharmaceutical chemistry laboratory (forty-eight lockers), a group of five offices for pharmacy staff (Figure 7), and a group of four offices with a small research laboratory for the staff in pharmaceutical chemistry and an auxiliary storeroom to service these laboratories.

**THE THIRD FLOOR**

This floor has a group of five offices for the staff in pharmacology and four offices and a small research laboratory for the staff in pharmacognosy. There is a large laboratory (120 lockers) devoted to pharmacognosy (Figure 8) which is provided with visual-aid facilities; adjoining is an herbarium room with a laboratory desk of twenty-four lockers, a laboratory for advanced pharmacognosy and research, a research laboratory for pharmaceutical chemistry (six to twelve students), and an instrumentation room, a laboratory for clinical testing and diagnosis large enough for about twelve students, two laboratories for pharmacology (Figure 9), one of which is provided with an amphitheater arrangement of twenty-four seats for demonstration purposes. There are also on this floor an auxiliary storeroom and a faculty restroom.

**THE FOURTH FLOOR**

There is a research laboratory for pharmacology (four to eight students), a special operating room, a food storage room, a bulk storage room, a dark room equipped for diversified photographic operations, a bomb room especially constructed for high-pressure experiments, four postdoctorate research laboratories (Figure 10), quarters for large and small animals, a large room designed for washing and sterilizing cages and equipment used in the animal rooms, and washroom facilities for the animal caretaker.

In presenting this brief summary of the facilities of the College, it might be pointed out that because of the geographical location of the College and the rapid development of the state of Texas as an industrial empire, the building was planned for the future to enable the College to train an increased number of pharmacists for retail practice and other types of distribution of drugs and to offer graduate instruction for the master of science degree in pharmacy and the doctor of philosophy degree in pharmacy for fifty students. The fields of special instruction at present are pharmacy, manufacturing and hospital pharmacy, pharmaceutical chemistry, pharmacognosy and pharmacology.

---



FIG. 1. THE PHARMACY BUILDING, UNIVERSITY OF TEXAS



FIG. 2. MANUFACTURING LABORATORY, UNIVERSITY OF TEXAS



FIG. 3. THE LIBRARY, UNIVERSITY OF TEXAS

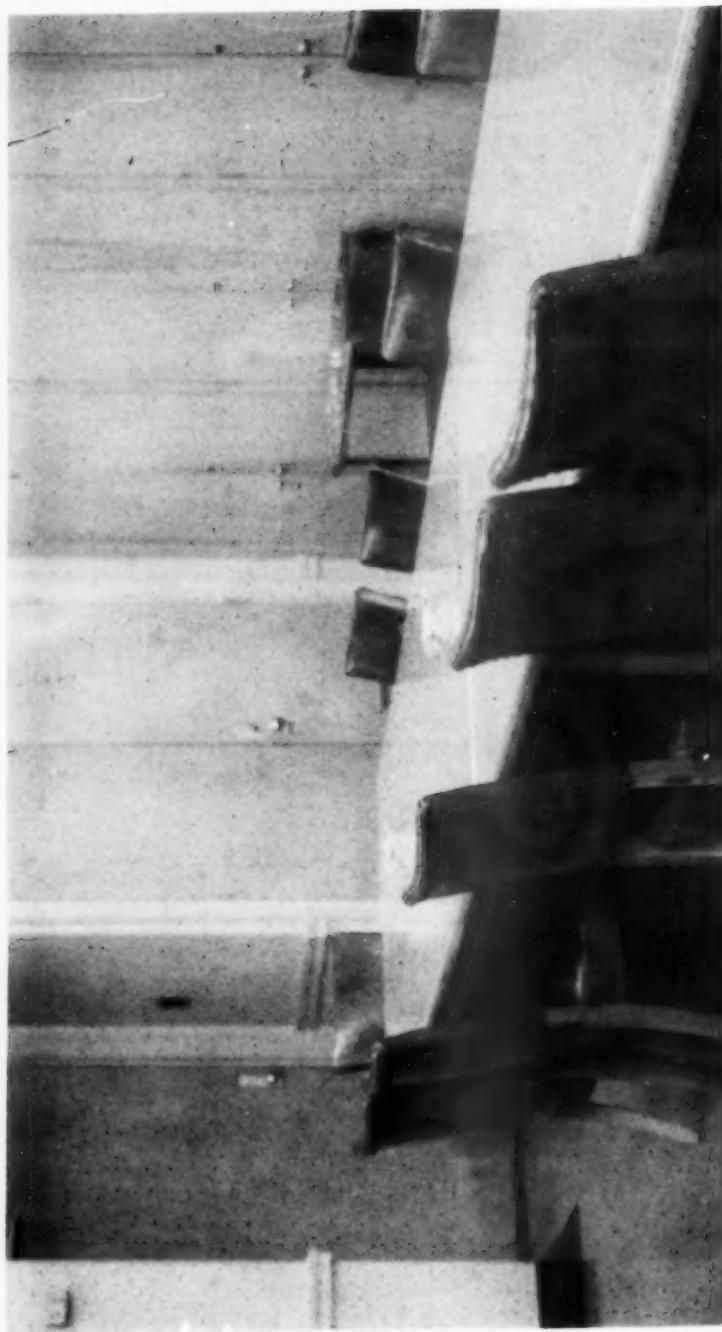
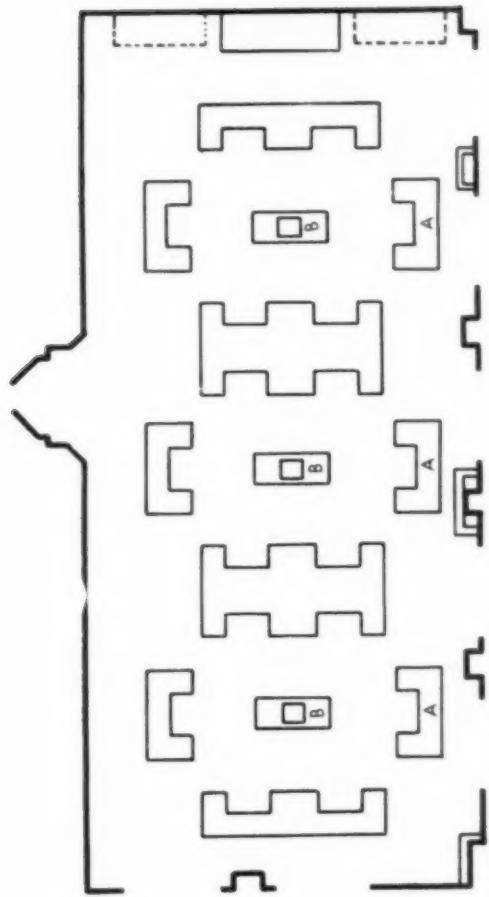


FIG. 4. CONFERENCE ROOM, UNIVERSITY OF TEXAS



### Arrangement of Dispensing Laboratory

A — Individual Prescription Units

B — Sinks

FIG. 5. DISPENSING LABORATORY, UNIVERSITY OF TEXAS

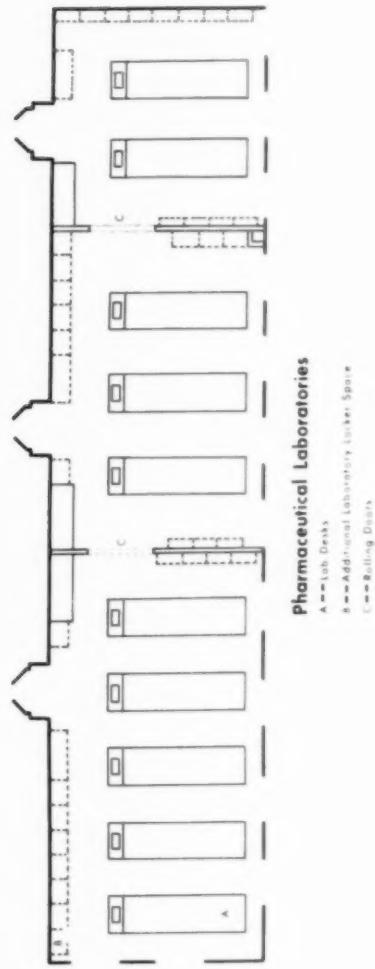
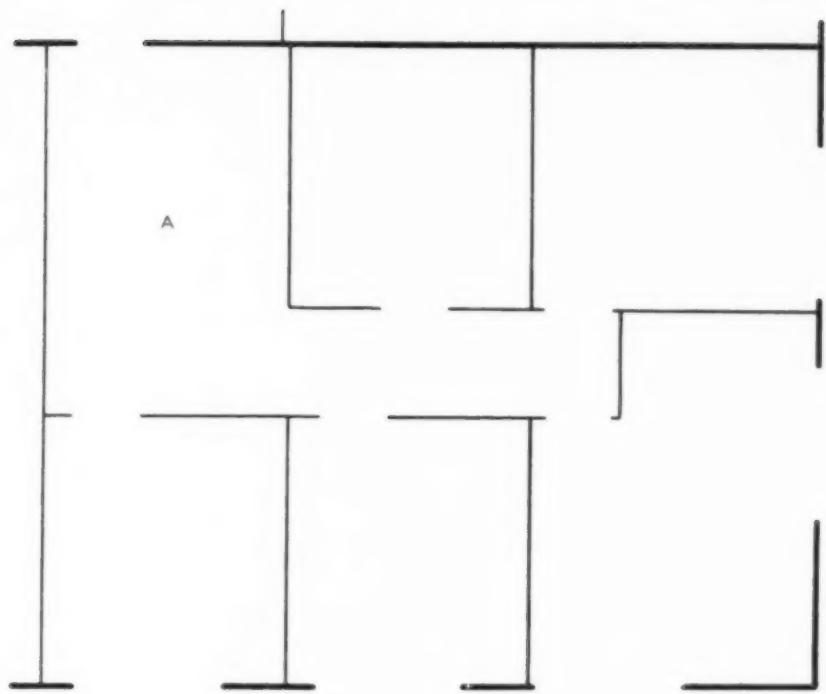


FIG. 6. PHARMACY LABORATORIES, UNIVERSITY OF TEXAS



**Floor Plan of Department Offices**

A --- Reception Room

FIG. 7. DEPARTMENTAL OFFICES, UNIVERSITY OF TEXAS

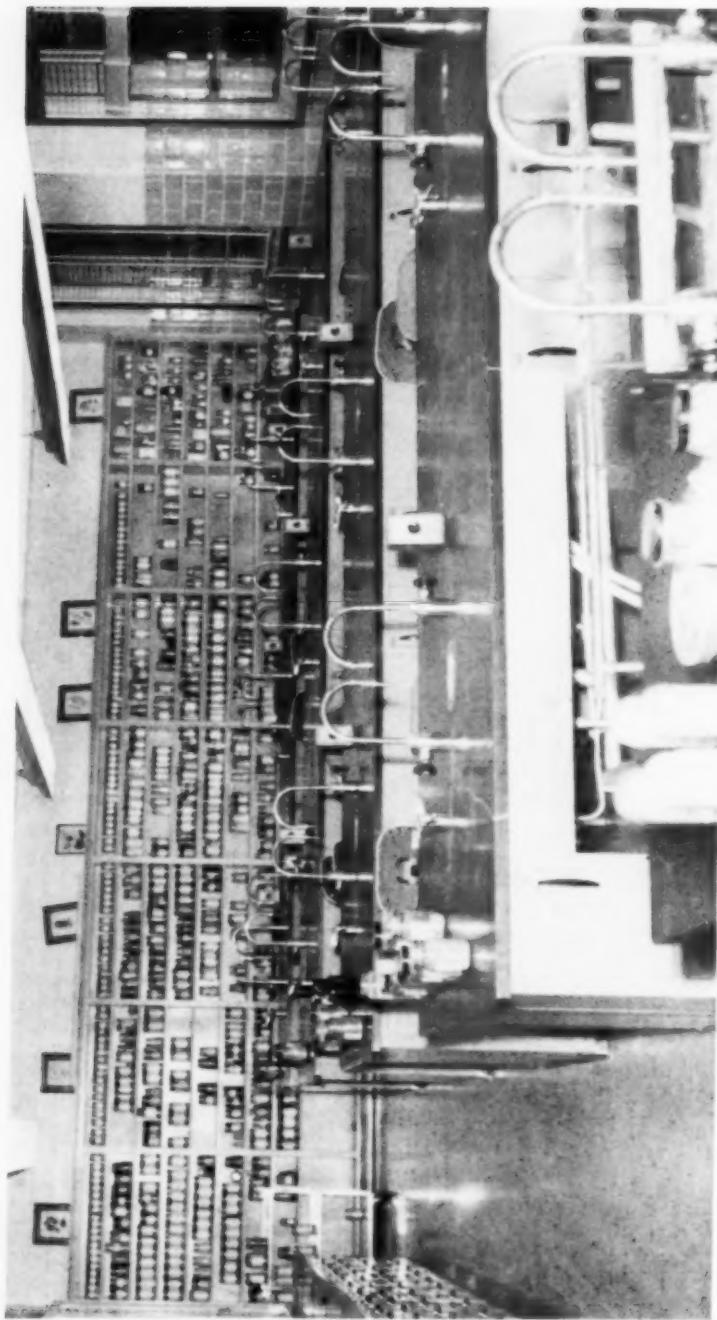


FIG. B. PHARMACOGNOSY LABORATORY, UNIVERSITY OF TEXAS

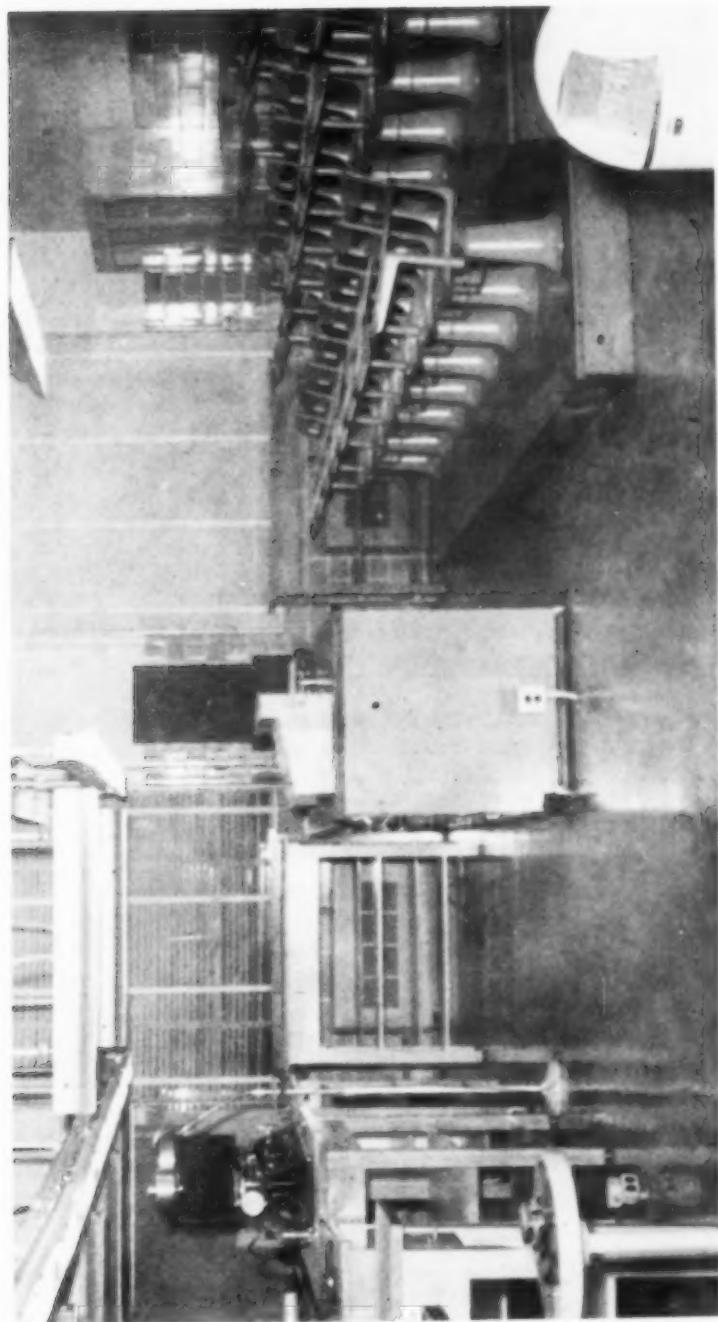
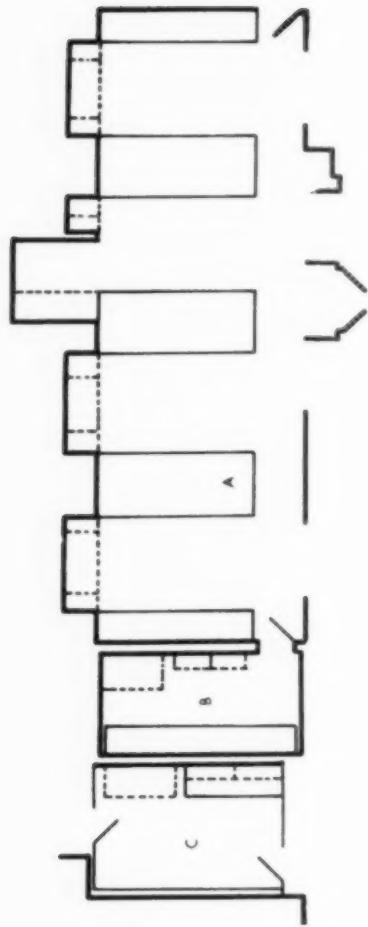


FIG. 9. PHARMACOLOGY LABORATORY, UNIVERSITY OF TEXAS



**Arrangement of Individual Research Units**

A — Lab Desks with Hoods and Other Utilities

B — Bomb Room

C — Photo Darkroom

FIG. 10. POST-GRADUATE RESEARCH LABORATORY, UNIVERSITY OF TEXAS

## ANALYSIS OF A PILOT STUDY OF FACTORS THAT MOTIVATE INDIVIDUALS TO ELECT THE HEALTH SCIENCES AS A CAREER, WITH SPECIAL REFERENCE TO PHARMACY\*

ROBERTSON PRATT

Increased public awareness of health needs and an expanding population have created great demand for qualified practitioners in all of the health sciences. Since no profession can be any better than the individuals who administer and practice it, the problem of recruiting superior personnel to satisfy the increased demand is extremely important. Methods used in the past to assist in selecting personnel and prospective students—scholastic achievement tests, measured interest tests, occupational intelligence standards, and occupational rating scales—have been useful in their time but seem not to be entirely adequate now. This is partly because of the greatly increased need for personnel today and partly because none of the conventional methods adequately provides an appraisal of human interests, traits, and needs for self-expression and satisfaction.

It seems possible that persons choosing a particular profession would, if data from enough individuals could be assembled, be found to have a characteristic set of likes and dislikes which would tend to differentiate them from persons in other fields of activity. From study of these sets of likes and dislikes, one might be able to discern a pattern of motivating factors and, armed with this information, be in a favorable position to more intelligently and efficiently outline a recruitment program designed to enlist the interest of those individuals who would be more competent for the respective fields. Such information might, in addition, be a valuable guide in counseling students and other personnel.

Therefore, the above-named committee (see footnote below for members) began discussions of this problem during the

\* Part of a cooperative survey conducted at the University of California by Dr. William W. Stiles (School of Public Health), Dr. John B. Lagen (School of Medicine), Dr. Robertson Pratt (School of Pharmacy), Dr. Wendell L. Wylie (College of Dentistry), and Miss Bernice Hudson (School of Nursing). The study was financed in part by research funds of the University of California and from the American College of Dentists. A portion of the survey has been published (Wylie, W. L.: Factors motivating choice of a profession. *J. Dent. Ed.*, 19, 159-172, 1955; and Stiles, W. W., and Watson, L. C.: Motivations of persons electing public health as a career. *Am. J. Pub. Health*, 45, 1563-1568, 1955.)

1949-50 academic year and conducted the pilot study described below during three test years from 1951-52 to 1953-54. The committee was interested not only in characteristic differences and similarities among different groups of the health sciences and the motivating factors that led the individuals into them, but also in factors that the participants in the survey considered irrelevant.

#### TEST DESCRIPTION

Information regarding possible motivations of students in professional health schools was obtained by means of a modified form of questionnaire. The "questionnaire" consisted of a set of 26 IBM white punch cards upon each of which a separate statement of possible motivations was printed. Included in each set was a colored punch card, on which the student wrote his name and the date, and a white tabulator dividing card on which the respondent was requested to list any motivating factors which pertained to himself but were not printed on any of the white punch cards.

With the complete set of cards, each student received a dittoed sheet of instructions which stated that he was to sort the cards into two piles, those factors which were influential in his choice of a profession and those which were totally irrelevant. They were then asked to sort the pile of significant statements so that the most significant card was on top and the others continued in a decreasing order. The two piles of cards were placed together, with the divider card separating them, and were collected. The accumulated sets were then taken to the IBM computor laboratory where they were tabulated.

The statements of possible motivating factors were devised to indicate what types of factors were influential in the choice of the student. Several statements were made for each of the categories of economic factors, social factors, personal factors, and those which might have been associated with previous experiences. The specific topics with the coded letter designations used in the discussions below are listed in Table 1.

TABLE 1

LIST OF MOTIVATION SURVEY TOPICS AND CORRESPONDING CODE LETTERS	
*A.	Pressure by parents or by circumstances not of one's choice.
†B.	Influence of a relative or of a close friend who is not in this or related fields but has always wanted to be.
*C.	Close relationship of this vocation to another which could not be attained for some reason.
*D.	Working conditions and hours seemed desirable.
†E.	Vocational guidance by a professionally trained counselor or special tests.

- F. This vocation permits one to work independently of other people.
- G. Influence of a particular teacher or a class in school.
- †H. Some environmental or geographic factor, such as an opportunity to travel or reside in a community where the occupation is the major interest of almost everyone.
- I. Experience gained while in military service.
- J. Native interests and aptitudes which make it natural to pursue this field in preference to all others.
- \*K. Expectation of a substantial financial income and economic security.
- \*L. Expectation for advancement in position, social prestige, or responsibility.
- \*M. Limited financial resources or time for schooling and technical training.
- \*N. Influence of a person actively engaged in this field.
- \*O. Previous experience in an occupation closely related to your expected career.
- P. The chance to avoid or delay some less desirable experience.
- \*Q. An opportunity to fulfill one's financial needs immediately.
- R. An agreeable opportunity which materialized unexpectedly.
- \*S. An existing setup, such as a partnership with relative or friend, which made it advantageous to follow a given career.
- \*T. Some health, physical, or age limitation.
- U. An impression gained from moving pictures or from a radio or television program.
- V. This vocation allows one to meet many other people.
- W. Because of previous training, it now seems impractical to prepare for anything else.
- X. An impression gained from reading a book, pamphlet, or other literature.
- Y. Influence of a relative or of a close friend who has not himself had aspirations in the field.
- Z. Some significant factor which has not been adequately covered in the other categories.

\* These topics were rated higher by pharmacy students than by the other groups of students. (See discussion below.)

† These topics were rated lower by pharmacy students than by the other groups of students. (See discussion below.)

#### TESTING PROCEDURE

The survey was conducted by gathering the selected class or group of a specific professional school together and giving each student a set of the IBM cards, the name card, the divider card, and the sheet of instructions. Immediately before the test, the person administering it read the instructions aloud to the group, while the students followed on their own direction sheets. A particular effort was made to avoid any variables of associating a particular place, subject, person, or occasion with the test.

Freshman classes in the several professional schools were tested and also the senior classes, since it was decided that it would be of

interest to learn whether substantial changes in the kind of responses given might be observed when freshman and senior groups are compared, and of even more interest when responses of freshmen are compared with the responses given by the same people when they become seniors. Unfortunately, due to lack of funds which necessitated interruption of the investigation, it was not possible in the present pilot study to achieve the latter objective.

#### GROUPS TESTED

The students used as subjects for this study were those enrolled in professional schools of the health sciences (dentistry, medicine, nursing, pharmacy, and public health) at the University of California. It was decided to survey each year, until a valid conclusion could be made, the freshman classes entering the various schools in September and the graduating seniors from those same schools in June. The graduate classes of the School of Public Health, being primarily one-year groups, were the only exception.

Since the program was instituted, 1,569 students have been surveyed. This number includes six survey groups, three September groups, and three June groups. The present report pertains to the pharmacy groups which, in number of respondents, comprised 28.2 per cent of the total. Pharmacy students comprised 23.4 per cent of the total number of entering (September) students and 36.7 per cent of the total number of finishing (June) students.

#### TABULATION AND ANALYSIS PROCEDURES

Since there were 26 different items and since these could have been chosen in any sequence, it was necessary to determine not only how frequently (*actual value*) a given item was indicated as a motivating factor, but also how often it ranked first, second, third, etc. for each group. In other words, its intensity (*relative value*) as a motivating factor had to be determined. Moreover, since the relative values ascertained for each of the selected topics were proportional to the number of respondents in each specific test group, valid comparisons of the different groups could not be made by direct comparison of relative values. There was needed an adjustment which would compensate for the varying sizes of the different groups and permit direct comparisons. Therefore, such a factor was determined by conventional statistical methods. The result was an adjusted relative value for each topic. All the results reported below are in terms of these adjusted relative values (A.R.V.) and are valid in direct comparisons of the different groups.

**ANALYSIS OF RESPONSES**

The adjusted relative values of the several topics for the total of all groups surveyed are compared graphically with the corresponding values for the total of all pharmacy groups in Figure 1. Replies of pharmacy students are included in the A.R.V. for "Total of all groups." It should be kept in mind, in examining Figure 1, that this tends to minimize the differences between responses of pharmacy students and the students in the other professions. Figure 2 shows a comparison of the A.R.V. for the total of all entering pharmacy groups and the total of all finishing pharmacy groups. In both figures, topics are arranged in descending order of A.R.V. found for the composite composed of the total of all groups surveyed. Comments on the responses regarding the specific motivating factors are given below, according to the following pattern: Each factor is listed (in boldface), preceded by its corresponding assigned IBM code letter and followed by a brief discussion.

**J. Native interests and aptitudes which make it natural to pursue this field in preference to all others**

When the responses of all students of pharmacy, medicine, dentistry, dental hygiene, and public health, including those beginning and those concluding their formal professional education, are grouped together, this factor leads all others by a substantial margin. When it is assigned an adjusted relative value of 100, the next topic (K, expectation of substantial income) rates only 72.

Pharmacy students deviated from the group pattern with regard to this factor in that item J ranked second with them while K was first, and there was less spread between the first and second choices. Indeed, items J and K (A.R.V. 95 and 100, respectively) were so close that it is questionable whether the difference is significant.

When only senior pharmacy students are considered, they fit the general pattern in that item J rated first (A.R.V. 100), but item K (expectation of financial reward) loomed much more important (A.R.V. 95) than for the total group of health students (A.R.V. 72). This trend, i.e., greater emphasis on financial aspects among pharmacy students than among the group comprising all students, is apparent in all items having a monetary consideration. (See items L, S, M, and Q in Figure 1.) Pharmacy students, perhaps since most of them gain actual "field experience" while still in college, seem to gain confidence in their aptitude for their chosen profession as they progress through school. While "native interests and apti-

tudes" had an A.R.V. of 90 for beginning pharmacy students, it was first choice (A.R.V. 100) for seniors. This is shown in Figure 2.

#### **K. Expectation of a substantial financial income and economic security**

During the planning stages of the survey, concern was expressed that students might tend to conceal materialistic motives and thus reduce the significance of the results. It seems likely that this concern was unwarranted, since for the group of all students, it had an A.R.V. of 72 and ranked second only to the previous topic (Fig. 1), was a very close second for the senior pharmacy students (A.R.V. 95), and was first choice (A.R.V. 100) for entering freshmen in pharmacy (Fig. 2). It also was rated first by all groups of dental hygienists and by the senior dental students. The possibility still remains that lack of candor on the part of some respondents tended to obscure the true significance of this factor. However, this seems unlikely to be a major consideration, at least for pharmacy students, since topic L (expectation for advancement in position, etc.), which may be considered another facet of the same subject, rated a strong third.

Dr. Wylie, in analyzing the data accumulated in the survey of dental students, has pointed out that "Before one launches a whole series of interesting speculations, he should consider the possibility that there may be some significant difference in sampling due to the passage of time. One obvious possibility of this sort is the fairly steady decline, percentagewise, of the number of veterans enrolled ... during the test years. This might lead to a situation in which our total senior sample is top-heavy with veterans as compared to the total freshman sample. Some observers would want to cite this evidence in support of previously undocumented opinion which holds that veterans tend to be somewhat calculating as they pursue a program of higher education, determined as it were to make up for lost time. An equally valid conclusion, tentatively supported by a comparison of all beginning students with all finishing students, is that as young people mature and come closer to the period in which they must earn a living, they tend to attach more importance to economic success and financial security."

There is no doubt that the sampling of all senior pharmacy students in comparison with all entering pharmacy students was top-heavy with veterans, and that this influenced responses to some topics (see especially topic R below). However, this seems not to have been an important factor in determining responses to topic K. In fact, if one wished to throw caution aside and to attempt to

draw conclusions from small differences, based on the limited number of respondents, one might conclude that the freshman pharmacist is more mercenary than the senior. Topic K has an A.R.V. of 100 for freshmen, but for seniors is in second place with an A.R.V. of 95. It may be significant in this connection that topic L (expectation for advancement, etc.) also received a larger play from entering pharmacy students, with whom it had an A.R.V. of 79.5, than from seniors who gave it an A.R.V. of 68.

Changes in outlook undoubtedly occur during the four years in college and alter the frame of reference in which the student looks back on his original plans, motivations, and ideals. The passage of time and the experiences in college certainly have some effect on maturation of the individual.

In any event, it is clear that, compared with the pooled responses of all students surveyed, the pharmacy students' replies indicate a greater interest in the material aspects of their profession. It is not our purpose here to analyze this observation further to ascertain whether the pharmacy student, in comparison with his fellow students in other health professions, is more practical and realistic, less scholarly minded, or more candid in his replies.

#### **V. This vocation allows one to meet many other people**

Few people like to be hermits, and this observation was reflected in the replies of all groups to this topic. In the composite picture of all groups of all students, it rated third (A.R.V. 60). At first glance, pharmacy students appeared not to differ markedly from the group in their rating of the relative importance of this topic (A.R.V. 56), but if one examines the order of topics, it appears that for the average pharmacy student the importance of this factor in relation to others is less than for students in other fields. Whereas topic V rated third in the composite group, sharing its position with the expectation for advancement (topic L), for the group of all pharmacy students it ranked sixth, being exceeded by topics L, N, and O (see below) as well as by J and K discussed above. For entering pharmacy students it was fourth in rank (A.R.V. 57); for seniors it was sixth (A.R.V. 52).

#### **L. Expectation for advancement in position, social prestige, or responsibility**

For the entire group of students in the health sciences (Fig. 1), this factor had the same importance as the preceding one (A.R.V. 60); but it was considered more important by pharmacy students, who rated it a full 20 points higher than they rated item V. The respective values for pharmacy students were V, 56; and L, 76.

When the replies of pharmacy students are considered in finer detail (Fig. 2), a pronounced difference is apparent between the freshmen and the seniors. The A.R.V. for entering students, who ranked this factor third in their selection, was 79.5; for seniors, with whom it ranked fourth, the A.R.V. was 68.

It was pointed out before that this observation is compatible with the greater importance entering students placed on factor K (expectations of substantial income, etc.). One would not like to believe that the lower rating given the present topic by seniors as compared with freshmen was due to disillusionment of the former by their experiences working in drugstores during their college years.

#### **N. Influence of person actively engaged in this field**

For the composite group composed of all students surveyed, this factor had an adjusted relative value of 51; there was no substantial difference between the evaluation by the entering and finishing students. However, pharmacy students attached more significance to this factor than the other groups did. The value for all pharmacy students was 61. For entering pharmacy students it was 56; for seniors it was 67. The factor ranked fifth with both groups.

#### **O. Previous experience in an occupation closely related to your expected career**

One might expect wide differences in response to this topic, depending on the professional field. Also differences would be expected between seniors and beginning students, since many of the veterans, who were more numerous among seniors than among freshmen, gained experience as corpsmen during their years of service. These expectations are confirmed by the data. The A.R.V. of this topic for the composite of all groups was 45, but it was 68 for the total of all finishing students and only 34 for the total of all freshmen.

As would be expected, this factor rated higher with pharmacy students than for the combined groups, and the spread between entering and finishing students was less. The A.R.V. for the total pharmacy group was 65; for seniors it was 80, and for freshmen, 54.

#### **Z. Some significant factor which has not been adequately covered in the other categories**

This topic served "in part to relieve the frustrations of those who could find nothing on the first 25 cards to satisfy their urge

for self-expression." Apparently, the entering students were more satisfied with the other 25 possibilities presented to them than were the finishing students: the A.R.V. for the total of all entering students was 25, but for seniors it was 48. The composite value for all groups surveyed was 33.

The values for pharmacy students were 13 for freshmen, 52 for seniors, and 29 for the composite of all pharmacy classes surveyed. The same trend was noted with dental students, among whom the A.R.V. was 17 for freshmen and was 42 for seniors. The reason for the wide discrepancy between the entering and finishing classes is not readily apparent, unless it can be ascribed to the fact that as one matures there may be less tendency to pigeon-hole reasons for going into a profession, and the original thinking may be altered through more mature reasoning.

#### **F. This vocation permits one to work independently of other people**

Apparently this was not a strong motivating factor for pharmacy students or for the composite of all groups. With an A.R.V. of 29, it ranked eighth for the composite group. With the pharmacy students it ranked tenth with an A.R.V. of 27. There were only minor differences between the responses of entering and finishing students regarding this factor irrespective of whether one considered only pharmacy majors or the composite of all groups. For some unexplained reason, dental students did not fit the general pattern. For the group of all dental students, this factor had an A.R.V. of 83, and for dental seniors a value of 96.

#### **D. Working conditions and hours seem desirable**

This factor, with an A.R.V. of 28.5, ranked ninth in the overall survey of all groups. However, it should be remembered that when all the participants are pooled in one group, the data from any single category that makes up a large portion of the group may significantly alter the total picture. Medicine and nursing, neither of which is envied for its working conditions or hours, together provided 37.5 per cent of the total number of students surveyed. Therefore, it is not entirely clear whether the factor really seemed favorable to pharmacy students, who rated it seventh and for whom it had an A.R.V. of 36 compared with 28 for the composite of all students, or whether medicine and nursing merely look bad on this score.

A cynic might claim that pharmacy students become disillusioned about working conditions and hours as they gain experience working in drugstores while carrying on their professional train-

ing. Entering pharmacy students (Fig. 2) chose this topic as ninth in the list and selected it often enough to give it an A.R.V. of 43, but seniors ranked it fourteenth with an A.R.V. of 25. An equally valid conclusion would be that other factors were more important for the relatively older (and veteran-loaded) senior groups than for the entering classes during the test years and thus relegated item D to a position of minor importance for the seniors. For example, see discussion of items P, C, R, and M, all of which in one way or another could easily be related to time, age, or financial considerations and which one might expect to have specific applications to veterans.

#### **R. An agreeable opportunity which materialized unexpectedly**

Dr. Wylie has aptly pointed out that "the wording of this item was intended to provide a wolf in sheep's clothing. A blunter manner of expression would have been: 'Have we the G.I. Bill of Rights to thank for your presence on this campus?'"

The value for the group comprising all pharmacy students was the same as for the composite group of all students, namely, A.R.V. 23. The values for all finishing students and for all beginning students were 41 and 12, respectively. Whereas finishing students ranked this factor eighth, beginning students placed it fifteenth in the list. These figures emphasize the necessity of reckoning with the larger percentage of veterans in the senior groups during the test years. Pharmacy students did not deviate significantly from the total group pattern; A.R.V. for senior pharmacy students was 35, for freshmen it was 12.

#### **C. Close relationship of this vocation to another which could not be attained for some reason**

This apparently is not a strong motivating factor for professional students, since the A.R.V. for the composite of all groups was only 19. This value probably would be lower if it were not for the pharmacy students (28.2 per cent of all respondents), some of whom are strongly inclined toward medicine but, because of limitations of finances, or time, or for other reasons, believe that medicine is presently beyond their reach. This supposition is supported by the fact that the A.R.V. for pharmacy students was 29. The element of time as a limiting factor is probably largely responsible for the higher value (38) given this factor by the seniors than by the freshmen (22). It will be recalled that the senior groups contained many veterans who, of course, were older than the average college senior in normal peace time.

**E. Vocational guidance by a professionally trained counselor or special tests**

There appeared to be no significant difference between the responses of pharmacy students and of the group composed of all students to this topic. But if one wished to throw caution aside and to attach significance to small differences, it might be surmised that vocational guidance experts do not have a high opinion of pharmacy. An alternative explanation is that they are not adept at steering students into this field if they try to do so. The over-all value for all groups surveyed was 19; for pharmacy students it was 14. But, again if small differences are significant, prospects for the future may be brighter: the A.R.V. for senior pharmacy students was 11; for freshmen it was 22.

**G. Influence of a particular teacher or class in school**

Teachers at the pre-college level apparently do not wield a very strong influence so far as the choice of profession is concerned for students entering the health professions at the University of California. This factor had an A.R.V. of only 16 for the composite group of all students and rated thirteenth in a field of 26. When all pharmacy groups are pooled, this factor also rates thirteenth. It has an A.R.V. of 20, slightly, but not significantly, above the A.R.V. for all groups.

If small differences are significant, pharmacy may be losing prestige as a professional field of study in the opinion of pre-college teachers. Whereas, this factor had an A.R.V. of 28 for the senior pharmacy students, it rated only 13 for the freshmen. A similar, but less pronounced difference, is found in the data for the composite of all groups: the A.R.V. for finishing students was 21; for beginning students it was 14.

**P. The chance to avoid or delay some less desirable experience**

This was another wolf in sheep's clothing. A less discreet statement and one which, because of its lack of face-saving character, might not have received such candid replies would have been: "The chance to avoid or delay being drafted into the Armed Forces." The responses suggest that the investigators were following a promising lead. For the total of all groups the score was only 15, but the total sample included a large number of women, in whom draft boards, in their official capacity, do not have an interest.

The figure for total pharmacy students, about 10 per cent of whom are women, was 20, but a striking difference is seen, as would be expected between the generations of pharmacy students—

A.R.V. was 43 for the total of all finishing students, but only 5 for those just beginning in the College.

**B. Influence of a relative or of a close friend who is not in this or related fields, but has always wanted to be**

In dealing with this question, one is once again impressed by the fact that the investigation has dealt with students of quite different generations. The A.R.V. for all groups of entering pharmacy students was about 6, but the corresponding figure for the senior groups was 19. It rated twenty-first in importance for freshmen, but sixteenth for seniors. The A.R.V. for entering embryo pharmacists is the same as for the total of all entering groups, but the score for seniors is 10 points below the figure for all finishing groups. This seems to indicate that among those not in pharmacy, this field is held in lower esteem than the other health professions. This conclusion is compatible with the observations made above about item E (vocational guidance by a professionally trained counselor). This is understandable if one considers the practices that are seen in some retail pharmacy outlets. It argues strongly for a vigorous program to inform the professional counselors, the lay public, and the students of high school and junior college age concerning the practice of ethical pharmacy, its potentialities, and its opportunities, if we are to attract superior students to our colleges and schools of pharmacy.

**H. Some environmental or geographic factor, such as the opportunity to travel or reside in a community where the occupation is the interest of almost everyone**

This seems not to be an important factor for pharmacy students who, as a total group, ranked it twenty-fifth in importance—the A.R.V. was less than 4. This was somewhat below the figure (13) for the composite of all groups, in which this item ranked sixteenth.

**X. An impression gained from reading a book, pamphlet, or other literature**

This topic rated an A.R.V. of 13 for the total of all groups surveyed and also for the total of all pharmacy groups surveyed. The responses to this topic would seem to indicate that general literature does not present an appealing picture of the health sciences, or that special pamphlets and brochures prepared to attract students to the health professions have fallen short of their goal.

**W. Because of previous training, it now seems impractical to prepare for anything else**

The response of pharmacy classes (Fig. 2) to this item probab-

ly reflects again the differences between the student generations surveyed. Entering students gave this factor an A.R.V. of 14, but seniors gave it a value of 25. Many of the seniors, as was pointed out before, were veterans, and a significant number of them had experience as corpsmen in the Armed Forces (see discussion of topic O above). Undoubtedly, many of these individuals, being older than the average peace-time college student and feeling that time was important and wanting to make use of the G.I. Bill, would decide to become professionally trained in pharmacy. This would be a logical decision, since normally they could achieve economic security sooner in this field related to their prior experience than if they were to go into one of the other health professions. The A.R.V. for this factor based on all pharmacy groups surveyed (Fig. 1) was 19; for the composite of all groups it was 12. Presumably, experience in the Armed Forces had a small but significantly greater role in sending students to the School of Pharmacy than into the other health professions in the immediate post-war years.

**Y. Influence of a relative or of a close friend who has not himself had aspirations in this field**

The response of all groups to this topic was low—A.R.V. for all pharmacy students 16, for the composite of all groups 12. It seems not to merit further discussion.

**I. Experience gained while in military service**

This topic failed to draw a large response from any group—A.R.V. was 10 for the composite of all groups and also for the total of the pharmacy groups. The response by pharmacy students seems to torpedo the theorizing indulged in above in the discussion of topics O and W. There was a difference of only 1 point between adjusted relative values for entering and finishing pharmacy students. However, some support for the previous theorizing is found in the data for the composite groups composed, respectively, of all entering students and of all finishing students; the A.R.V. for the former was 5, and for the latter it was 17.5. The apparent incongruity of pharmacy students' answers to this question seems inexplicable in view of the fact that responses to all other questions having direct or indirect bearing on the matter of veteran vs. non-veteran status indicated the strong influence that service in the Armed Forces had in sending students into pharmacy and the other health professions.

**S. An existing setup, such as a partnership with a relative or friend, which made it advantageous to follow a given career**

This factor, while apparently not a major consideration for any

of the groups of students in the health professions, is more important for embryo pharmacists than for the other groups. While the total for all groups was only 12, the total for pharmacy students was 19.

#### **M. Limited financial resources or time for schooling or technical training**

This factor, like the preceding one, was more important for pharmacists (A.R.V. 20) than for the total of all groups (A.R.V. 8). The responses of pharmacists attest the significance of the different age groups during the test years. This topic rated 12 with entering pharmacy students, but jumped to 31 with the veteran-loaded senior groups. A similar, but less pronounced, trend is seen in the figure for totals of all groups—7 for entering students and 12 for finishing students.

#### **T. Some health, physical, or age limitation**

This factor seemed relatively unimportant for all groups. If small differences are significant, it was a stronger determining factor for pharmacy students (A.R.V. 11) than for the composite of all groups (A.R.V. 5). If one assumes age to be the most important of the three limitations mentioned in this topic, the responses of pharmacy students were consistent with their relative rating of the next factor (Q) discussed below.

#### **Q. An opportunity to fulfill one's financial needs immediately**

One would not expect this factor to have a high rating among professions requiring a minimum of from four to seven years of training beyond high school—and this was found to be the case. The A.R.V. for the total of all groups was less than 5. It probably is significant that the total for all pharmacy groups was more than twice this value (A.R.V. 11). This supposition is strengthened by the fact that while entering pharmacy students gave it a value of 5, the total for all senior pharmacy groups was 17.

#### **A. Pressure by parents or by circumstances not of one's choice**

This factor rated so low (A.R.V. 3) for the total of all groups (Fig. 1) as not to merit discussion for them. It may be significant that for pharmacy students it rated 8 points. Of my own knowledge, I recall some students who were more interested in other fields, but who were in pharmacy because their parents had a store, which they wanted the son or daughter to take over, or were otherwise engaged in some phase of pharmacy.

One would think that physicians and dentists likewise would encourage their children to follow in their respective professions.

Therefore, it is difficult to account for the difference between the responses of pharmacy students and of the other groups on this point. Could it be that pharmacy students were more willing to admit parental influence or were more aware of it?

#### **U. An impression gained from moving pictures or from a radio or television program**

This topic had the lowest rating of all for the total of all groups as well as for the total of all pharmacy groups. It drew a complete blank from pharmacy freshmen (Fig. 2), but for some reason that entirely escapes me it rated 10 points with the pharmacy seniors. I cannot recall any Hollywood production that has glorified the role of the pharmacist in society.

#### **SUMMARY**

A pilot study has been made of motivating factors selected by students of dental hygiene, dentistry, medicine, nursing, pharmacy, and public health at the University of California as having been important in their choice of their respective future professions. Between June 1951 and September 1953 evaluations were obtained from 1,569 individuals, 422 (28.2 per cent) of whom were pharmacy students.

In assessing the relative importance of 26 factors submitted to the students from which they were to choose, proper weight was given to the number of times each topic was chosen, the relative importance given each topic by each student who chose it, and to the total number of students in each of the groups surveyed.

An attempt was made to discover the differences, if any, in the attitudes of those beginning a particular professional course and those at the end of it. These data should not be interpreted as if the test had been given to a group of students at the beginning of their course and resubmitted to the same students at the end of the course. This was not a serial study, but rather a cross-sectional one. Therefore, any differences found between beginning and finishing students should not be attributed only to changing attitude (as might be proper in a serial study), but also to inherent differences between the samples. The data strongly suggest that the samples are different from one another so far as beginning and finishing students are concerned. One is tempted to conclude that the relatively high percentage of veterans in the classes designated as finishing classes affected the responses to certain topics.

The data suggest that pharmacy students, regardless of age, may be motivated by "practical" considerations to a greater extent than students in some of the other professional areas. Examples of such

considerations are expectation of economic security; expectation of advancement in position and social prestige; an existing setup, such as a partnership; and an opportunity to fulfill one's financial needs immediately.

The data indicate that all of the students in the health professions have great confidence in their aptitude and ability in their chosen field. This is as it should be. If they did not have an abiding faith in their own talents, it would be difficult for them to instill confidence in their clientele.

Some of the results of this study can be interpreted as indicating that pharmacy is not held in very high esteem by vocational guidance counselors. Every pharmacist and every drugstore is, in a measure, a viewing glass through which the person not actively engaged in some aspect of the profession gains a glimpse of the "inside" of pharmacy. It must be admitted that the glimpses seen through a few of these viewing glasses are not such as to instill confidence in the standing of pharmacy or of its potentialities for truly professional service. Unfortunately, as is true in other phases of life, often it takes only a few bad experiences to counteract the impression that can be made by many good ones.

Pharmacy as a profession—and this means every individual pharmacist—should give serious thought to the aspect it presents to the public if it wants to attract to its ranks the superior young men and women who can maintain and improve its professional standing.

Many other implications of the data are pointed out also.

---

*Unlike general education, pharmaceutical education serves a specific purpose. It also serves a public purpose, because every practitioner of the Art of Pharmacy becomes a public servant, in the sense that he is charged with certain responsibilities necessary for the protection of the public health and welfare, which only he is permitted to assume.*

Robert P. Fischelis, Am. J. Pharm. Ed., 4, 276 (1940)

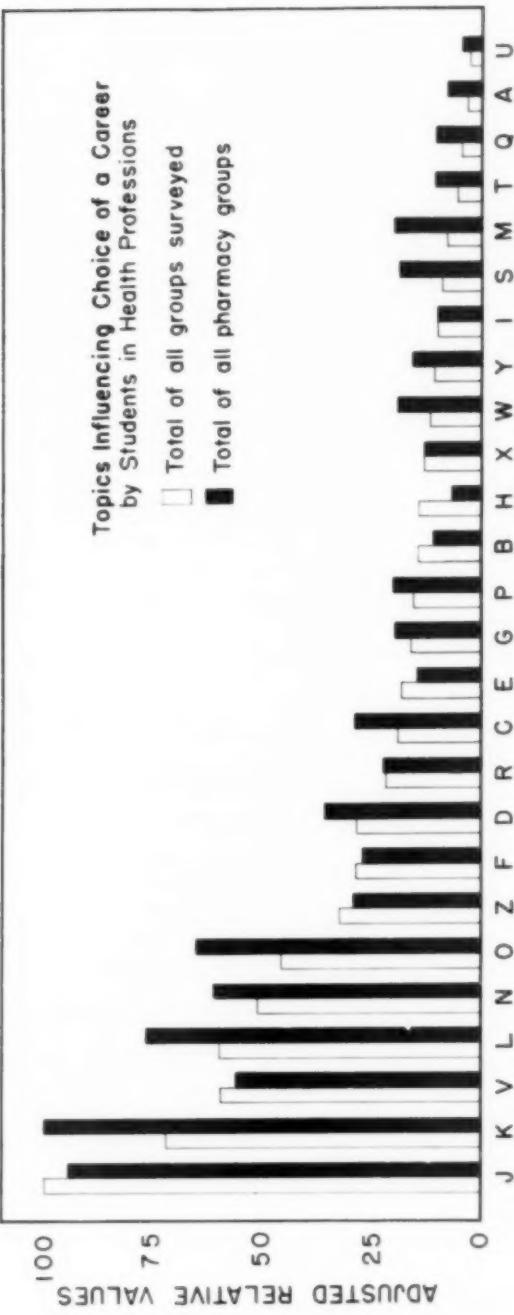


FIG. 1. ADJUSTED RELATIVE VALUES OF FACTORS IMPORTANT IN THE CHOICE OF A CAREER BY STUDENTS IN THE HEALTH PROFESSIONS

Note that replies of pharmacy students (28.2 per cent of total respondents) are included in values for "Total of all groups surveyed" and that this tends to minimize the differences between pharmacy students and the other students.

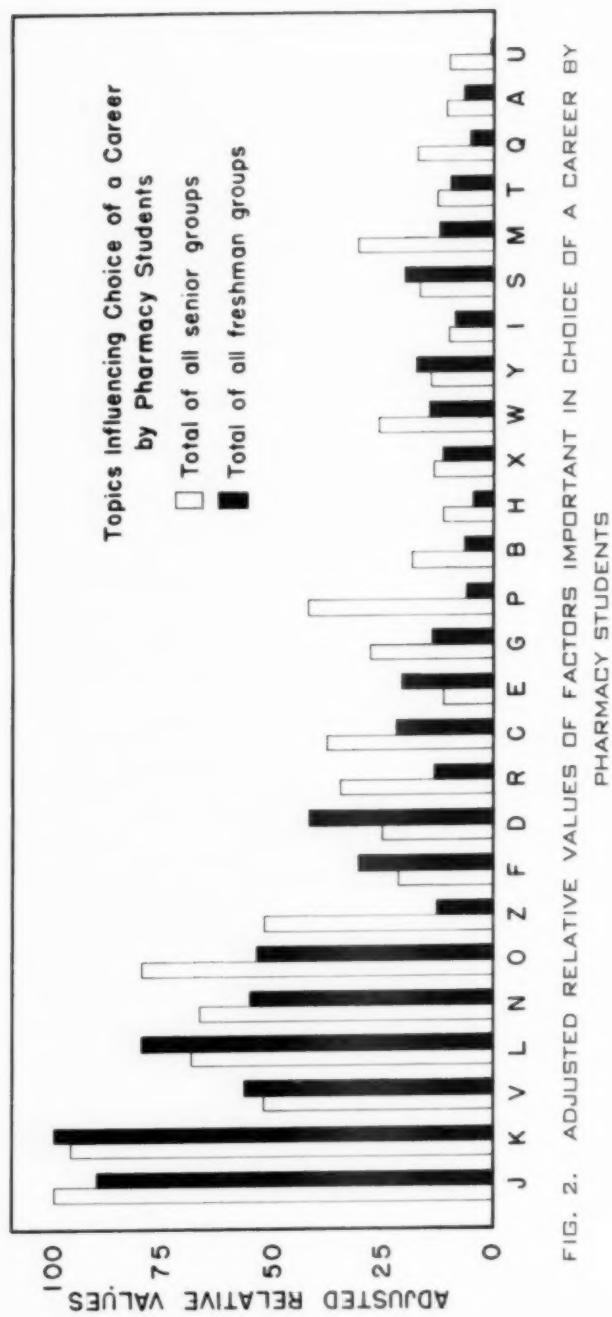


FIG. 2. ADJUSTED RELATIVE VALUES OF FACTORS IMPORTANT IN CHOICE OF A CAREER BY PHARMACY STUDENTS

## AN EXPERIMENT WITH CURRICULUM REVISION\*

ARTHUR G. ZUPKO AND FRANK L. MERCER

Many schools of pharmacy are in the process of revising their curricula; others contemplate this step. A combination of the report of The Pharmaceutical Survey and the publication of *The Pharmaceutical Curriculum* by Blauch and Webster stimulated pharmaceutical educators toward critical evaluation of existing curricula. Further stimulation has been afforded by adoption of the five-year course beginning in 1960. The difficulties concomitant with curriculum revision are manifold as is known to those who have attempted this chore. In a recent publication Blauch (1) recommended certain essential considerations in evaluating any curriculum. These consisted of deciding what courses were necessary to accomplish the objectives of pharmaceutical education, examining the selected courses to ascertain their effectiveness and organization, arranging a proper sequence of courses with adjustment of time allowances, and prescribing specific prerequisites for courses where needed. Our curriculum committee has not only observed these recommendations but has provided each faculty member with a syllabus of courses taught, the contents of which were previously discussed and approved by the entire faculty. A discussion of the progressive steps involved in curriculum revision culminating in a syllabus is the purpose of this paper.

There are several advantages in providing faculty members with syllabi, chief among which may be listed the following:

1. Provides each faculty member with a kaleidoscopic view of the educational pattern involved in the training of a pharmacist from freshman through senior years.
2. Permits the teacher to present various phases of a course in a better sequence to coincide with concomitant material being given in other courses.
3. Makes available to any accrediting body or interested persons the content of courses of instruction embodied in one report.
4. Enables, in some cases, continuation of a course of instruction by a faculty replacement without his being hampered by a lack of knowledge of course sequence. Situations of this type, created by illness or other dire emergencies, are inevitable, and a syllabus often serves a useful purpose in this respect.

---

\* Submitted as a contribution of members of the Committee on Problems and Plans.

The first step toward our ultimate goal was to make available to each faculty member a copy of the Blauch and Webster report on *The Pharmaceutical Curriculum* (2). Coupled with this the current catalogs of all the schools of pharmacy were procured, and each faculty member was asked to report comparative findings in his own area of instruction. Comments on the Blauch and Webster publication and catalog findings were then submitted to a five-man committee on curriculum. Consideration of these reports was undertaken by this committee in an attempt to secure the best possible curriculum in terms of our objectives in training the student of pharmacy to meet his obligations in serving the health needs of a community. The recommendations of this committee were then placed before the entire faculty for discussion, and ultimately a curriculum suitable to all was decided upon.

The next step involved considerably more difficulty in that each member of the faculty was asked to write a comparatively detailed outline, according to a prescribed form, for each course of instruction taught by him, including both lecture and laboratory phases. These course outlines were submitted to the committee which, in turn, scrutinized the contents carefully. Wherever possible and feasible, department heads were asked to meet and compare their respective outlines for the purpose of arranging and rearranging contents as well as establishing the proper sequence of presentation of the material. Upon completion of these meetings, which consumed about three months, the committee had in its possession detailed course outlines to which all departments subscribed. Copies of these outlines were mimeographed, bound in the form of a syllabus, and placed in the hands of each member of the faculty. Thus the first major step in our curriculum revision program was accomplished.

Further revision is contemplated every semester. Each faculty member has been asked to evaluate critically his own report to the committee as well as to suggest changes or improvements in other areas of instruction. The committee has further requested that each syllabus be returned after each semester with notations and comments directly on the pages of the syllabus. In time the committee expects to have a loose-leaf type of syllabus which can be modernized whenever changes are brought about. With this type of program it is our earnest hope that the training of our students will be kept modernized and maintained at a high level.

It would be idealistic to believe that accomplishments of intended objectives were not fraught with difficulties. On the contrary, at times problems became so entangled that the committee was on the verge of discarding the entire project. It would be well to make

note of some of these difficulties so that other institutions may possibly benefit.

In all probability proper faculty attitude is of the greatest concern. It is no easy matter to convince an instructor that he should spend several hours in preparing the contents of his course for a syllabus in such a manner as to be lucid and devoid of extraneous material. Common faults exhibited by faculty members are a tendency toward making their outlines resemble the table of contents of a text being utilized in the course and a tendency toward either inadequate descriptive content or toward excessive detail. In our experience several staff members developed a violent suspicion that their academic freedom was being impaired and that the curriculum committee was intent upon dictating that which should be taught. This feeling resulted from an erroneous concept of intended objectives. The usual inertia was manifested among several faculty members, and constant prodding was necessary to obtain cooperation in this endeavor. Still another thought the entire procedure to be useless. However, upon completion of the syllabus and agreement upon the revised curriculum, these attitudes were softened considerably. Few faculty members balk at tasks assigned them when they realize the benefits to be derived.

Difficulties in utilizing the Blauch and Webster report were also encountered, owing chiefly to the many changes that have come about since material for this publication was assembled. Recommendations suggested by these authors met with some disapproval in several instances, *viz.*, the offering of only 6 credits in pharmacology; botany and pharmacognosy being given concurrently in the third year; 5 credits of microbiology in the second year or 3.3 credits in the third year; no biochemistry on the semester plan; 3 credit hours of history of pharmacy, and so forth. In an effort to substantiate the findings of the Blauch and Webster report, as well as to give the committee a more nearly complete picture of the pharmaceutical curriculum offered by other schools, current catalogs of all schools of pharmacy were examined. Although it was admittedly of limited value, perusal of these catalogs directed our attention to the great changes that have occurred over a three-year period. At present a majority of schools are essentially in agreement with most of the recommendations listed by Blauch and Webster. A few recommended courses have been slighted by most schools, particularly pharmaceutical technology. Generally we found the use of both the Blauch and Webster report and current catalogs offered much assistance in revising our curriculum and completing a syllabus. One cannot resist inserting the comment that a few schools list an excellent curriculum but in some fields give extremely limited training

to students. A notable example of this occurred recently at our institution in the case of a recent graduate of a prominent school of pharmacy which lists a splendid course in pharmacology in its curriculum. It developed that this student, admitted as a candidate for an advanced degree, had never handled a kymograph or injected an animal; in fact, he had never done any laboratory work in pharmacology. One wonders how many schools set forth an excellent curriculum on paper but encounter difficulty in providing the actual training.

Thus far we have attempted to show our *modus operandi* in curriculum revision and syllabus compilation as well as to point out the difficulties involved in these procedures. It should be realized that the undertaking of such a program is extremely time consuming and that if any progress is to be made a wholehearted effort on the part of both administration and faculty is necessary. Many schools associated with universities may have difficulty in obtaining the cooperation of those faculty who teach students of pharmacy in other schools on the campus. The procedure described here has unquestionably brought the matter of pharmaceutical education rather forcibly to the attention of each member of our staff with the net result that each one now has a greater realization and appreciation of the part his particular area of instruction plays in the training of a prospective pharmacist. We strongly urge other schools to undertake compilation of a syllabus or some modification, and to report their experiences so that all in pharmacy may benefit. It is hoped that the relating of our experience may give incentive to some other institution in its attempt to evaluate its own curriculum.

#### SUMMARY

1. An experience with curriculum revision and syllabus compilation is presented. The advantages of a syllabus for each faculty member are outlined.
2. The difficulties involved in this procedure are discussed with particular emphasis upon faculty attitude.
3. Other institutions are urged to compile syllabi or some modification and report their experiences so that pharmaceutical educators may benefit.

#### REFERENCES

1. Blauch, L. E., *Am. J. Pharm. Ed.* 17, 50 (1953).
2. Blauch, L. E. and Webster, G. L., "The Pharmaceutical Curriculum," American Council on Education, Washington, D.C., 1952.

## TEACHER TRAINING FOR COLLEGES OF PHARMACY\*

R. S. MCCUTCHEON

Before considering the main topic here, it may be instructive to very briefly review the development of teacher education in this country. In 1839, the first normal school was established in the United States, and prior to that time no college or university gave special instruction for the preparation of teachers. Prior to 1900 no preparation was given by any normal school toward the development of teachers above the elementary grade. Not until after 1900 did more than two or three institutions grant degrees to majors in education. Very few institutions of higher learning granted any specialized training for secondary school teachers before 1920. In most cases those that had developed this type of program up to this time were not normal schools. The universities were more interested in the training of secondary school teachers than were the normal schools, but not until comparatively recently have there been many such. Probably the first institutions to establish these programs were the Universities of Michigan, Iowa, and Wisconsin between 1873 and 1881. Since about 1905, there has been a slow growth of secondary school teacher training, and during this time the colleges and universities have taken over the bulk of this function. At the present time, and this has probably been only true for about the past 20 years, there is a widely developed, adequate program of teacher education in this country for teachers on the elementary and secondary level or for those who intend to become supervisors or administrators of such programs.

Thus it is probably true to say that our teacher-training program as it applies to pre-college teachers has only come to full fruition in very recent years. In regard to the training of teachers on the college level we are in about the same stage as secondary school teachers were about 1900. More and more thoughtful educators are coming to realize that teacher training has a real place in the development of college teachers. It has probably been well said that a sprinkling of scholars and professional educators is beginning to be impressed by the lack of efficiency of college graduates who obtain employment as teachers. Certainly it must be fallacious to think that because a person is well informed in a field of endeavor that he is qualified to teach in that field. In this connection I

\* Presented in substance to the District 7 Meeting, AACP, Seattle, Washington, 1954.

would like to quote a few lines from an article in *Higher Education* by Sonnedecker and Urdang in which they say "Unlike the curriculum question, the need for further upgrading of present faculties and for increasing the supply of fully qualified new teachers has not been open to serious question. The Pharmaceutical Survey considered this an insistent need."

It is my opinion that to be a teacher a person must have three basic qualifications: (1) He must be well informed regarding that which he is to teach. (2) He must have some knowledge and skills necessary to the art of teaching. (3) He must have a great reservoir of general information and cultural knowledge which lends him insight in dealing with students and upon which he can draw to enrich his offerings. Many college teachers have the second qualification in varying degrees depending on what they have learned by observation and experience.

It may be of interest in this regard to observe what other departments of the college have been doing in relation to this problem of training college teachers. Three of the schools that seem to me to be taking the most interest at the present time are chemistry, engineering, and forestry. I can give but a brief glance at each of these in the limited time available, but I would like to quote from an article in *Chemistry and Engineering News* entitled "Putting the Plus into Teaching." "The systemic approach can result in greatly improved teaching efficiency. Not only does this method add to student interest but it may also decrease the difficulty of the course. By this approach, the instructor provides a continuous thread upon which otherwise unrelated facts may be strung. The picture of the structure of the material world so developed may be intrinsically more valuable to the average student than a vast amount of descriptive information." And with special regard to our methods in pharmacy schools, let me also quote from a report made by our ASEE committee on Improvement of Teaching. "Use of the project method of instruction should replace the problem or exercise method wherever feasible. Retention of knowledge, particularly facts *per se* should be de-emphasized, and an attitude of initiative and individual thought should be fostered." I would also like to quote from a report on the Improvement of Teaching made by the faculty of our school of forestry: "The obligation of professional education includes giving the student general education and knowledge and skill in his specialty, but it goes farther. These things will be of little use unless we also develop his interests, appreciation, attitudes and ability to think." I hope that I have not unduly belabored the point, but I feel that the above quotations show that the faculties of other professional schools are thinking seriously

in terms of the improvement and modernization of the instruction in their departments.

Maybe it has not been necessary to present arguments for the improvement of college teaching, but it is a serious problem about which comparatively little has been done. Much interest has been expressed in this connection with the programs at the University of Michigan and at Oregon State College. Both institutions are attempting to do the same thing but are going about it in different ways. So far as is known, the University of Michigan is starting a program for the training of college teachers only in its school of pharmacy. At Oregon State College there is a more fully developed program which is available to graduate students from any department on the campus who wish to take a college teaching minor.

In corresponding with Dr. Deno of the University of Michigan, I find that he has condensed his program quite well in his paper given before the Teacher's Seminar on Pharmacognosy. Two graduate courses dealing with the current position and problems in pharmaceutical education in the United States are offered. These courses have been labeled Academic Pharmacy, each consisting of three semester hours of work, and have been planned in such a way that a minimum of instruction is given in the educational field for graduate students who intend to teach in pharmacy college. A brief outline of the content of these courses shows that the over-all educational objectives are discussed, and each student develops a set of objectives for a particular course in which he is interested. The courses go rather thoroughly into the pharmacy curriculum, measurement of educational achievement, methods and techniques, selection and supervision of students, responsibilities, supervision and support of teachers and administrative officers, physical facilities, and pharmacy history.

Dr. Deno mentions that one or two other schools offer a program having similar objectives which are carried on by professors from the department of education in conjunction with the pharmacy faculty on a seminar basis. I feel that there is something to be said in favor of such a system with or without the professor from the department of education. A seminar of this type in which all of the pharmacy faculty participated with the objective of developing teaching methods and discussing the curriculum could be of great value to the graduate student and of no less value to the faculty members taking part.

Another phase of the program mentioned by Dr. Deno is the development of some means of giving practice teaching to the student in the college teaching minor. There is no doubt that such training would be of great value to the student if his program was

properly supervised although it is easy to see that it might be very difficult to put this into practice. If provision could not be made for practice teaching, a less effective but still valuable course, if dynamically taught, could be one in observation of teaching. The student could, for example, work with a professor in the preparation of a teaching unit and watch its presentation, then follow through on the testing.

Later, as a recitation in class or in the seminar, he could conduct a critique of the unit. He might occasionally have the opportunity of preparing and presenting a lesson himself and be observed by other trainees and faculty members after which a critique could be held in the seminar or class.

The program at Oregon State College which was previously mentioned consists of enough courses for graduate students wishing to prepare for college teaching to obtain a minor or split minor in the subject. The courses now offered are: The College Student, College and University Teaching, The American College and University, College Teaching Studies, and Seminar. These courses are given under the auspices of the graduate school. They are given for students from any field who may desire the training, and they are given largely by the seminar method. Students work with courses and objectives from their own field and do collateral reading assigned by the instructor. In the meetings of the class, a general discussion is carried on covering the topics assigned for that particular meeting. Faculty members having an interest in the course or in the particular topic being discussed or whose classes have been visited and are to be discussed are invited to sit in on the meetings and to participate. Such a program offering several classes has a wider scope than that outlined by Dr. Deno, and, in addition, there is the advantage that the group is large enough to make for greater interest and better discussions. Such a group, drawn from several departments, will give the student an insight into the problems, methods, and objectives of other fields of learning and help him see the similarities and differences in method for different fields and the reasons for them. It also brings into the class a large group of experienced instructors and thus widens the student's view of educational method and opinion.

An attempt has been made to show that the colleges are coming to recognize a need for teacher training for college teachers and to show that this is probably a natural development of the over-all movement for the training and improvement of teachers of all levels. A comparison has been made of the offerings at Michigan and at Oregon State College as they apply to prospective teachers of phar-

macy. Certainly there is a growing interest in the improvement of teaching with more and more attention being given to the development of teachers of pharmacy which must result in an improvement of the profession.

---

*. . . take pride in your professional calling and take strength from your own integrity of practice. Your professional pathways are carefully delineated in width by the ethics of practice in your chosen field. Step out boldly and firmly along them. Your progress along these pathways depends upon using each step in preparation for the next; and the length you may travel depends entirely upon your pride in profession and your constant seeking to apply your knowledge and skills to the problems of the day.*

F. Royce Franzoni, in an address to the graduating class of Albany College of Pharmacy, June, 1954. Mr. Franzoni was then President of the American Pharmaceutical Association.

## PHARMACEUTICAL APPRENTICESHIP: THE STATE BOARDS' VIEWS AND REGULATIONS\*

J. LEON LICHTIN

Pharmaceutical apprenticeship or internship has recently been the object of much interest and discussion. Suggestions have been made as to how the quality of the pharmaceutical experience could be improved. Some State Boards have recently adopted new regulations regarding the supervision of the apprenticeship program; in other states amendments to existing laws have been submitted to the legislatures. Because of these recent developments, it seemed worthwhile to make a study of the rules and regulations concerning apprenticeship of the individual State Boards.

To obtain the desired data, a questionnaire was sent to each of the 48 states and the District of Columbia. The data obtained from the answers are summarized below under several headings, which correspond approximately to the questions submitted to the Boards. From 49 questionnaires sent to 48 states and the District of Columbia, a total of 30 replies were received.

**Important.** In summarizing this data, "the number of states" mentioned in the summaries below refers only to those 29 states plus the District of Columbia which replied to the particular question and answer being summarized. It is to be noted that in the summaries below, amendments to existing pharmaceutical laws (regarding apprenticeship) which have been submitted to the legislatures of Delaware and California have been considered as being already in force.

### PART I

#### *Earliest Permitted Beginning Date for Apprenticeship*

- A. After graduating from high school:<sup>1</sup> 4 states (Iowa, Kentucky, Minnesota, Texas).
- B. By minimum age (15-16-17): 5 states (Illinois, Colorado, Ohio, South Carolina, West Virginia).
- C. After entering college: 2 states (Delaware, District of Columbia).
- D. After enrolling or acceptance in a college of pharmacy: 2 states (Kansas, North Carolina).

\* Submitted as a contribution of a member of the Committee on Problems and Plans.

<sup>1</sup> If a minimum age is coupled with a college status requirement, the latter has been used as a basis for compiling this part.

- E. Three months prior to beginning pharmacy college: 2 states (Nebraska, Virginia).
- F. After beginning pharmacy college: 3 states (Georgia, Maryland, New York).
- G. After one year of college (pharmacy ?): 2 states (Arizona, Michigan).
- H. After one year in a college of pharmacy: 1 state (Pennsylvania).
- I. After two years in a college of pharmacy: 3 states (Arkansas, California, Oregon<sup>2</sup>).
- J. After graduation from a college of pharmacy: 2 states (Montana, New Jersey).

**PART II***Total Length of Apprenticeship  
(without regard to when it is to be completed)*

- A. 1000 hours: 1 state (Texas: no prescriptions may be filled).
- B. 1900-1950 hours: 2 states (California, Vermont).
- C. 1 year (qualified as 2000-2100 hours): 3 states (Kentucky, Maryland, Pennsylvania).
- D. 1 year (qualified as 2400-2500 hours): 7 states (Arizona, Delaware, District of Columbia, Minnesota, Montana, Oregon, South Carolina).
- E. 1 year (qualified as 52 average work weeks): 1 state (Nebraska).
- F. 1 year or 52 weeks (unqualified<sup>3</sup>): 16 states (Arkansas, Colorado, Connecticut, Georgia, Illinois, Iowa, Kansas, Louisiana, Michigan, Mississippi, New Jersey, New York, North Carolina, Ohio, Vermont, West Virginia).

**PART III***Time during which Apprenticeship Experience May (or Must) Be Obtained*

- 1. During the school year on evenings, weekends, and holidays, or during summer vacations: 3 states (California, Texas, Vermont).
- 2. A. During the school year only on weekends and on certain or all holidays, or during summer vacations: no state.
- B. Same as 2, A, but six months of the experience must be obtained after graduation from a college of pharmacy: 1 state (Arizona).

<sup>2</sup> After five-year plan goes into effect.

<sup>3</sup> It is quite possible that the actual law does qualify this. The answers submitted in writing, however, merely mentioned "one year," etc.

3. A. During the school year only on some or all of the holidays such as Christmas or between semester (etc.) vacations, or on summer vacations: 10 states (Colorado, Illinois, Iowa, Kansas, Kentucky, Louisiana, Nebraska, Ohio, South Carolina, Virginia).  
B. Same as 3, A, but six months of the experience must be obtained after graduation from a college of pharmacy: 3 states (Arkansas, Delaware, Michigan).
4. A. At no time during the school year. Only during summer vacations: 7 states (District of Columbia, Georgia, Minnesota, Mississippi, New York, North Carolina, West Virginia).  
**Note:** Three of these seven states (District of Columbia, Georgia, New York) limit the beginning of the apprenticeship to the time that the student begins his studies in a college of pharmacy. It is quite possible, therefore, that the student would have to complete his apprenticeship during part or all of the summer following graduation (compare 4, B, following).  
B. Same as 4, A, but a fraction of the experience (indicated with each state) *must* be obtained after graduation from a college of pharmacy: 3 states (Maryland—4 months; Oregon—3 months; Pennsylvania—3 months).
5. All the experience must be obtained subsequent to graduation from a college of pharmacy: 2 states (New Jersey, Montana).

**Note:** Connecticut requires six months after graduation from a college of pharmacy. No other details available.

#### PART IV

##### *State where Apprenticeship Must be Served*

Some states insist that the apprenticeship be served in the state for whose Board the apprentice is preparing himself. Others permit this experience to be obtained elsewhere. No definite categorization of replies appears possible.

#### PART V

##### *Supervision of the Apprenticeship:*

*(The manner by which the Board directs the apprenticeship program or by which the Board satisfies itself as to the duration and quality of the apprenticeship)*

**Note:** Although there are many slight variations between the individual states, it appears that from the viewpoint of "ap-

prenticeship supervision," the states can be divided into three large groups:

**Group A:** States which require affidavits by the preceptor and/or the apprentice coupled with the inspection of the stores: 16 states (Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Illinois, Kansas, Louisiana, Maryland, Mississippi, New York, Ohio, Texas, Vermont, West Virginia).

**Group B:** States which supervise the program as in Group A, but in addition require the submitting of a notebook or periodic forms to the State Board by the student or preceptor or both: 7 states (Kentucky, Michigan, Minnesota, Nebraska, Pennsylvania, South Carolina, Virginia).

**Group C:** States which carry on a program similar to Groups A and B. In addition, however, the actual content of the apprenticeship program to be followed is submitted in detail by the State Board to the preceptor and student. This program is either in the form of a list of projects to be covered, or is in the form of *printed* progress reports (to be filled in by the student or preceptor, or both) which are so detailed as to constitute a submitted program of apprenticeship: 6 states (Arizona, Iowa, Montana, New Jersey, North Carolina, Oregon).

**Notes:**

1. A few of the states in Group B may actually use the detailed forms mentioned under Group C—but these were not definitely mentioned in the questionnaire or submitted with it.
2. In some states an apprenticeship can be obtained *only* in stores that will definitely follow the program prescribed by the State Board.

#### PART VI

##### *Participation by Colleges in the Apprenticeship Program*

In none of the states which answered the survey do the colleges participate in the apprenticeship (or internship) program.

#### PART VII

##### *Comments by State Boards regarding Apprenticeship Regulations*

1. A few states commented that with more funds, periodic visits (quarterly) could be made to the preceptor and intern.
2. Concern with uniformity of regulations and desire that at least the National Association of Boards of Pharmacy standards be adopted by all the states were voiced by some states.

3. Several states contemplate a closer supervision of the apprentices (than is otherwise presently in force) by the use of periodic written reports to the Boards.
4. A number of states expressed concern with the differences in the quality of experience obtained in different stores.
5. A group of states is going to reconsider the periods of time in relation to collegiate standing where apprenticeship may be served when the five-year plan goes into effect.

#### SOME PERSONAL COMMENTS AND QUESTIONS

1. The terms, "apprenticeship" and "internship": The term "apprentice" is being replaced by "intern" in some states. This may be indeed desirable if the change in names is accompanied by a change of the program of apprenticeship. Since the public generally uses the term "intern" to indicate a person who has recently received the M.D. degree but who is yet to become a full-fledged practicing physician, would it not be more precise from the terminology viewpoint to use the term "intern" (or "internship") for experience obtained after graduation from a college of pharmacy?
2. Some states do not have any requirement regarding the earliest date at which apprenticeship may begin.
3. "Experience obtained subsequent to the beginning of college attendance" appears to be a possible loophole. Is a college of pharmacy meant? A student may begin college in some other field and then transfer to a college of pharmacy. This transfer may even be separated by an interval of a number of years. In the latter case, would it not then be possible to obtain *all* the required experience prior to beginning studies in a college of pharmacy?
4. "After enrolling in a college of pharmacy" as a beginning point of pharmaceutical apprenticeship: could this not be anywhere from one day to perhaps eight months prior to actually beginning studies in the college?
5. Some states permit apprenticeship to begin "after graduation from high school," yet have a carefully supervised program including the filling out of detailed quarterly progress reports. The program and the progress forms imply the performance of highly skilled pharmaceutical techniques or the understanding of a good deal of pharmaceutical terminology. Can a high school graduate prior to starting his studies at a college of pharmacy be expected to perform all these tasks? Furthermore, it is quite possible for a student to serve all the apprenticeship time *prior*

to beginning his pharmaceutical studies. A carefully planned out and supervised apprenticeship program complete with meaningful forms to be sent to the State Board is a *highly commendable* procedure, but should not the minimum age or time requirement then be raised?

6. It appears that several states recently have changed their apprenticeship regulations, or shortly intend to do so. In each case, the trend is toward a definite program of subjects to be learned and performed coupled with a more definite system of reports to the State Board. To this writer, the idea of a notebook alone appears too ambiguous. The quarterly progress forms which are in considerable (but not excessive) detail appear deserving of commendation. Recent changes have also been made by several states to require that all or at least part of the required experience be obtained subsequent to graduation from a college of pharmacy. All these matters outlined here appear to be receiving the serious thought and consideration that they certainly deserve.

The writer wishes to express his gratitude to the members of the various State Boards who answered his questionnaire and otherwise participated in this study.

---

*Today, all of pharmacy turns to the young men and women graduates to furnish the energy and enthusiasm for a revival and the strengthening of the professional spirit which is so needed now. There never was a better time for young people who wish to dedicate their lives to the service of their fellowmen to enter upon a career in pharmacy.*

F. Royce Franzoni, in an address to the graduating class of Albany College of Pharmacy, June, 1954. Mr. Franzoni was then President of the American Pharmaceutical Association.

## BRINGING PHARMACY TO THE HIGH SCHOOL CLASSROOM\*

EDWARD J. ROWE

A constant and continuing problem facing the profession of pharmacy is the necessity for creating in the mind of the public a better impression of the pharmacist's educational background and of his work. While Mr. and Mrs. Public's opinion and impression of pharmacy as a profession, good, bad, or indifferent, stems from the many drugstores of the country, it is also influenced by those of us who have the occasion to speak of and for the profession.

I am thinking in this instance of those of us who are invited to speak on the profession before groups of high school students.

While many speakers do a bang-up job before their own clubs, societies, and organizations, they just "lay an egg" when confronted with students of high school age. Should this occur to the speaker on pharmacy, certainly pharmacy's case is not helped.

I should like, therefore, to outline briefly suggestions which I feel should be kept in mind when presenting at the high school level an overview of the profession of pharmacy.

1. **Secure the students' interest:** Don't play master of ceremonies. If you open with a joke, keep it fit for students' ears. Don't tell all of the jokes in your repertoire. Students may laugh with you; afterwards, at you. They elected to listen to you because they were interested in pharmacy. Securing the students' interest should not be confused with entertaining. There is ample material in pharmacy that is attention-getting as well as informative.

2. **Start where the students are:** What can you find out about the group beforehand which would help you in organizing the approach to your subject? Are they all juniors? Seniors? Sophomores? Or from various class levels? Are there girls present? How many have worked in drugstores? If you don't know, ask the group directly by a show of hands.

To speak at a high school student's level, it isn't necessary to use teenage jargon. In fact, they don't appreciate your poaching on it. Slang, too, should be used sparingly. On the other hand, don't go "professorial." Do you use such terms as pharmacology and pharmacognosy? What would these terms have meant to you at the high school level?

---

\* Submitted as a contribution of a member of the Committee on Problems and Plans.

**3. Keep the students' interest:** Get students into the act. Use an anecdote . . . stories with you in them. If relating a story involving two people, let one person be you. Personal stories go over big, but they must illustrate a point. Be unassuming; act yourself. Regular fellows are respected. Teenagers can spot a phony a mile away. Don't use dramatics to stress or illustrate a point unless you are good at it. If you use figures, use them sparingly and round them off. Don't say there are 3041 pharmacists in your state; give them 3000. Make use of a chart, or write legibly and heavily enough on the blackboard. Scatter high points throughout your talk to avoid a spectacular start from sputtering in the middle and fizzling to a close. When summarizing your talk, do it briefly. Better still, ask the class to help you in the summarizing of it.

**4. Keep to the objective:** One thought may suggest other thoughts that may cause you to stray from your objective. Be sure to return to the objective; otherwise the students may not be able to put the pieces together. On the other hand, don't lack the adaptability to exploit the students' manifest interest in one of your statements to the advantage of the objective.

**5. Show enthusiasm:** Don't accept an invitation to speak unless you can speak with enthusiasm. Enthusiasm is infectious. You may be the popular corner druggist, but it will net little for pharmacy's prestige if you do not prepare yourself adequately for the talk. One well-known pharmacist took "two for the talk" and let it go at that. His performance was funny but not professional.

**6. Allow for questions:** Plan a short question period at the end of your talk. Most "career days" admit of this. If no questions are forthcoming, be prepared to pose one that is interesting and lively . . . preferably one with you in it. Make it one in which the group can participate.

Never belittle a student's question. It was important to him or he would not have asked it. No student wishes to appear ridiculous in the eyes of the group. On the other hand, don't let one student monopolize the time. Having had his share, give the others a chance.

When you give serious thought and adequate preparation to your presentation, you can leave the high school classroom secure in the feeling that you have furthered the profession of which you are a part. A profession grows in the eyes of the individual it serves, the community it services, and the youth it encourages to enter its ranks, just as its professional members "will" it to grow. Your contribution to the high school classroom is important.

## PHARMACY DISCOVERS PUBLIC RELATIONS\*

WILLIAM L. BLOCKSTEIN AND ROBERT W. SAGER

Public relations programs are usually started, and rightly so, by public relations experts. But what would you do if you knew nothing about the technical aspects of public relations, but suddenly found that quite by accident you had a genuine public relations lion by the tail? This is exactly what happened at the University of Pittsburgh School of Pharmacy in the past two years.

It began with a perfectly innocent and traditional homecoming program for the alumni. You know the type—show them how the school is keeping up to date with new teaching methods and equipment, give them a chance to talk together, and provide a little snack. After a few successive years it becomes a little difficult to round out a program with a new gimmick to catch alumni interest.

The faculty went through the usual routine of planning the program. Then somebody had the happy idea to broaden the scope—to show colored slides of students actually at work with the new methods and the new equipment. At first it was intended to have some member of the faculty comment on each slide—like the old-fashioned slide lecture. But this soon becomes boring, and often there seems to be little continuity to the whole presentation. Furthermore, it tends to become a succession of technical briefs, and considerable interest is lost by all except those who are vitally interested in technicalities.

It was a logical step, then, to prepare the commentary ahead of time to be certain that the remarks described just what the picture portrayed. It was a further logical step to record it ahead of time and attempt to synchronize it with the pictures.

By the time these decisions had been made, enthusiasm was sweeping through the school. Colored slides of activities in all courses were made even while the script writer was busy with the story. As the writing progressed, new slides were suggested to portray the ideas words expressed.

The script writer had by now advanced from the traditional technical approach to an informal story of the total education of a pharmacist. The story started with entrance requirements and wound up with a diploma. It even carried a substory of a worried mother with a sick baby having a prescription filled by her pharmacist. The complete story of education and training developed sought to assure the mother that her prescription was in good hands.

Since the symbol of the University of Pittsburgh is the 42-

\* First appeared in *College Public Relations Quarterly*, 6, 31 (1955).

story Cathedral of Learning, a model of this building was sketched. Each course, in a different color, was represented by a block in the building. This made a dramatic background for the sequence of professional courses, for as the building took shape the curriculum was shown.

An enthusiastic audience saw the first showing of "Pharmacy at Pitt." Faculty and administration were pleased because the gimmick had worked. But, it didn't end here as had been expected.

Instead, phones kept ringing, repeating the good comments of the night before, and, furthermore, requests for showing started coming in from the alumni who held offices in service and community groups.

The film was 38 minutes long so had to be revised if it was to be shown to lay groups. Although inexperienced in public relations, the faculty knew that no lay person could be expected to maintain much interest for that long. As a result, the film was cut to 20 minutes.

The film was shown before medical and pharmaceutical societies, Rotary, Lions and Kiwanis clubs, Parent-Teachers, and many other interested groups. At this point, we felt that we had reached all of our publics. Not only had the story of pharmacy education been retold to our alumni, but the same story had been told to the general public. Friends were being won for pharmaceutical education and for the corner pharmacist as well.

The next area that opened for the film came about when a friend of a faculty member asked for a program suitable for showing to a high school biology club. The film was shown, and again the reception was good enough for an expansion of plans. If the film had such a reception before one high school group, why not try to reach others? We did know that high school assemblies had varied programs for students, and that colleges used this as a means of recruitment. If our presentation would interest more students in a career in pharmacy, it was worth a try.

Even with no publicity beyond that spread by word of mouth, high school principals and guidance counselors soon found out that Pitt had a story to tell. Since the first showing before the biology club, there has been a demand for similar showings before other high school assemblies. The only factor limiting the program seems to be faculty time. Our method of operation uses two men, both of whom set up the equipment; one or the other then leads a discussion or question-and-answer session following the presentation.

To our amazement we found that the usefulness of our one-shot slide film, as it was originally conceived, had expanded. Our public relations lion had dragged us into three areas: first, profes-

sional and alumni relations; next, community relations, which developed directly from alumni contact in service clubs; and third, student recruitment, which came about through a friend's request for a high school program.

As educators are prone to do, faculty members discussed the film and its amazing results at their many professional gatherings. This resulted in a showing at the national convention of the American Pharmaceutical Association. This convention was attended by representatives from almost every college of pharmacy in the country, and they liked what they saw. Their interest was so great that we had to supply a number of copies of our script for their study. To the best of our knowledge, one school has already developed a similar production for use in its own area, and several other schools are working toward the same thing.

If we had had a public relations counsel, the total impact of such a film would have been pointed out to us in our early days. Without such counsel, the result is as discussed here—a project which gained momentum until it finally reached a high level of success.

In universities where there is a school of pharmacy, or any other school or department, with a story to tell, public relations people would do well to cooperate with the faculties concerned in making the story of education available for the public it would like to reach. In schools of pharmacy without a public relations office, the project can be carried out much as at the University of Pittsburgh, but watch out—the results may be more than you bargained for.

---

*The American Journal of Pharmaceutical Education, as the first mouthpiece that organized education in pharmacy has had in its history, gives us opportunity to identify ourselves publicly with many issues that we are in best position to both initiate and prosecute to successful ends.*

Wortley F. Rudd, Am. J. Pharm. Ed., 2, 254 (1938)

## BUSINESS MORTALITY IN RETAIL PHARMACY AND THE PHARMACY ADMINISTRATION PROGRAM\*

ISIDORE GREENBERG

In a paper read before this section last year, Professor Rabe deplored the attitude of students toward the course in drugstore management. He stated the situation so well that it bears repetition: "... the senior student will have acquired the feeling that he knows all there is to know of the operation of a drug store by virtue of his having worked in one or more stores. While it is not to be inferred that all such work-training is bad, it can be said with more than a fair degree of certainty that such training has been detrimental to the student. At times there exists a strong feeling among some students that what is being taught is a lot of nonsense, because the pharmacists for whom they worked did not follow the principles and policies laid down in the course in Drug Store Management"(1).

This attitude is met with elsewhere in pharmaceutical teaching, particularly dispensing pharmacy, and is an aspect of the problem of pharmaceutical internship. As I see it the problem resolves itself into one of: Should the colleges have the first opportunity to indoctrinate the student, or should the colleges be compelled to struggle against the current of "contamination" developed in the student by the practicing pharmacist? This internship problem, however, is not the subject of this paper, and I shall leave it, although it might properly be a subject for consideration by this section at some future date.

Such an attitude as described by Professor Rabe would seem to make a course in drugstore management superfluous and the efforts over the many years to establish such a course wasted. While we know that nothing is farther from the truth, it is possible that pharmaceutical educators and leaders have been so close to the problem and so acutely aware of the need for such a course that they felt that once it was offered, its value and significance would be readily self-evident, without further elaboration, to students and pharmacists alike. In short we have made very little effort to adequately motivate and orient the course in terms of the entire curriculum and in terms of the over-all pharmaceutical industry.

---

\* Presented to the Section of Teachers of Pharmacy Administration,  
AACP, Boston, Massachusetts, 1954.

There is one area of business activity analysis which we have probably neglected, which should properly be a unit in the course of study, and which can and should serve as a powerful motivating force to a more receptive attitude on the part of the students to acquire a thorough working knowledge of those accepted, good business practices that have taken so long to crystallize. Keeping in mind the fact that upwards of 85 per cent of our students still go into retail practice, I am referring to *business failures in retail pharmacy*. The mere possession of a license to practice, a couple of years experience, and zeal and enthusiasm are by no means a guarantee of successful management of a drugstore. This is evident when we consider that in spite of the better than average business stability of retail pharmacy 10 per cent of the drugstores change hands in a normal business year, about one-half experience new ownerships, and the others in closures (2).

In a study conducted as part of the National Retail Drug Store Survey, and reported in 1932, the following conclusions were arrived at: "There are undoubtedly many individuals engaged in business today who are not fitted by training, experience, or ability to manage a business successfully. Many a business venturer, it would seem, little realizes or appreciates the necessary requisites for success. With only an optimistic expectation of profits, many enter business through the assistance of credulous and liberal creditors. These venturers apparently have an utter disregard of the risk of failure, difficulties to be encountered, and the capital required. In other words they lack the necessary training, ability and experience" (3).

These conclusions were based on the following summary of findings: "Through analysis of the locations these stores occupied, it was found that one-third had chosen sites where drug stores had previously failed. Most of the owners had training in drug stores, but were so lacking in business ability that success could hardly be expected. Investors . . . would not have lost so heavily had they thoroughly analyzed the possibilities for success. Large bad-debt losses on credit sales, no doubt, had an adverse effect. The average overhead was extremely high and out of proportion to sales. Many fundamentals of successful merchandising were violated. In only two of 30 concerns studied was an attempt made to keep adequate records . . . Creditors should consider absence of an adequate set of records on the part of the merchant a pronounced danger signal. Difficulty in paying bills was experienced 14½ months prior to failing. Average rent paid for the failed stores was 10.6% of net sales. (Forty active stores paid only 4.7%.) Twenty of the 30 druggists supplied less than 30% of their capital at the inception.

Capital was acquired at such high rates . . . that sales were not sufficient to carry more than their commitments. Assets of the failed stores were only 59% of the scheduled liabilities. Realized assets were only 39% of scheduled assets" (4).

Quantitatively the study showed that:

- 25 out of 30 had previous experience.
- 15 out of 30 had insufficient capital.
- 20 out of 30 paid high rent.
- 10 out of 30 had same site as previous failures.
- 22 out of 30 were incompetent, shown by:
  - 21 of 30 never made a P & L statement.
  - 4 of 30 never took inventory.
  - 9 of 30 did not know how to compute turnover.
  - 2 of 30 relied on verbal agreements.
  - 1 of 30 partnership dissension.
  - 1 of 30 failed to take inventory on purchase.
  - 28 of 30 failed to keep records.

Causes beyond the druggist's control which were contributory, but not primary, were business depression, changes in racial groups, competition, and illness.

Twenty years later, in 1952, an analysis of 107 failed drugstores by Dun and Bradstreet shows substantially the same picture. This analysis notes that 86.1 per cent of the failed stores closed for substantially the same reasons: lack of experience in the line, lack of managerial experience, unbalanced experience, and incompetence. These are evidenced by inability to avoid conditions which resulted in:

Inadequate sales .....	48.6%
Heavy operating expenses .....	8.4%
Inventory difficulties .....	17.8%
Excessive fixed assets .....	12.1%
Poor location .....	4.7%
Competitive weakness .....	13.1%
Other .....	3.7%

Note especially that poor location and competitive weakness comprised together only 17.8 per cent, indicating that the potential was there but never realized. Clearly the problem is one of internal management control and salesmanship. Unfortunately these studies do not reveal anything about the marginal stores, those that are just holding their own. The *Lilly Digest* for 1952 shows that 23 per cent of the drugstores operate at a net profit of 2 per cent or less. Are these stores holding on by virtue of the fact that our country is presently enjoying a high economic level? I would an-

swer this in the affirmative. I would venture to predict that as our economy levels off or goes on a downward trend there will be a greater number of drugstore failures. Indeed, in spite of the high level of our economy, there has been a steady increase in drugstore failures since 1946, the low year. The Dun and Bradstreet analysis further reveals that in 1953, 123 stores failed with \$4,199,000 of liabilities, while in 1939, 539 stores failed with \$4,349,000 of liabilities. Today the risks and possible losses are about 4.4 times greater than they formerly were. The analysis also shows that 38.8 per cent of the failed stores were in existence three years or less, and 55.7 per cent five years or less, showing very definitely that the first few formative years are the ones fraught with the most danger and requiring the greatest managerial skill.

This picture of the causes and extent of business failures in pharmacy may strike a pessimistic note. But that is not its intention. Its purpose is rather to inculcate an attitude of caution and foresight. While the potential for success is present, it is by no means assured. In the same way that it is impossible to properly compound a prescription without first mastering a body of fundamental knowledge and techniques, so it is impossible to manage a business without first knowing the pitfalls as well as those practices which have been gleaned from costly experience and have been found to contribute materially to success. I would strongly recommend, therefore, that considerable emphasis be given to the problem of business failures in pharmacy, both from the point of view of motivation as well as a point of departure for determining the factors which make for success.

#### REFERENCES

- (1) Rabe, Charles C., *Am. J. Pharm. Ed.* 18, 46 (1954).
- (2) Dun and Bradstreet, Research and Statistical Division, "Drug Store Closings: A Detailed Analysis of 105 Drug Stores Closed," New York, 1953.
- (3) Department of Commerce, "Causes of Failures Among Drug Stores" (Part of the National Retail Drug Store Survey), Domestic Commerce Series, No. 59, Government Printing Office, Washington, D.C., 1932.
- (4) *Ibidem.*

---

*Removed from the hurly burly of the commercial world, educators are in position to see, or at least think they do, how things ought to be.*

Wortley F. Rudd, *Am. J. Pharm. Ed.*, 2, 254 (1938)

## THE USE OF THE COMPREHENSIVE PROJECT METHOD IN TEACHING PHARMACY ADMINISTRATION\*

S. B. JEFFRIES AND ISIDORE GREENBERG

To the student good teaching involves, among other things, *the ability to explain things well* coupled with an awareness on the part of the instructor of student-subject problems and relationships. Dale describes teaching as "... a two-direction process, a sharing process... the reaction and interaction of minds blossoming in a mood of mutuality."

Perhaps most important of all, good teaching involves using the most effective means of explaining and communicating. The teacher may visualize certain explanations by means of charts or graphs, or he may demonstrate as a means of explaining the subject being studied. He might also use a model or contrive an experience, as we have done with our pharmacy administration project, in order to better explain and illustrate an intricate point or principle.

Each of us, at one time or another, has despaired at the amount of knowledge that is half understood and quickly forgotten shortly after final examinations. When one stops to think of the tremendous amount of valuable class time that is spent in "text book" and "classroom" teaching of subject matter that leaves little or no impression on the student's intellect in the form of usable concepts or ideas, one is indeed shocked.

A continuing four-year survey of the pharmacy administration subject matter taught at our leading colleges of pharmacy, of the teaching methods employed, and of the nature, extent and usability of knowledge retained and actually used *after graduation* has shown that we have, at best, provided them with little more than a smattering of the knowledge which they should have about the administrative aspects of pharmacy in order to render better professional pharmaceutical service to the public.

It might be interesting to note that Dun and Bradstreet reports that 87 per cent of drugstore bankruptcies in 1953 were due to managerial incompetence and lack of knowledge and experience in sales, finance, purchasing, production, and personnel control.

We found, upon evaluating our teaching objectives, our methods, and our techniques, that pharmacy students, lacking, for the most part, the basic fundamentals of business administration, law and ethics, were not equipped sufficiently to crystallize experiences

\* Presented to the Section of Teachers of Pharmacy Administration, AACP, Boston, Massachusetts, 1954.

gained solely from the classical "textbook-teacher" type of abstract presentation into usable generalizations, principles, rules, concepts, and ideas . . . in other words, into intelligent, well-grounded pharmacy administration abstractions.

For example, pharmacy students learning to analyze a profit and loss statement for the purpose of developing usable operating ratios through textbook readings and classroom lecture and discussion were found to be at a loss when profit and loss-gross margin concept had to be applied to find initial markup percentage. They could handle the P & L concept for one purpose, but under different circumstances they were lost. They had failed to grasp and understand the fundamental accounting concepts, principles, and rules behind the P & L statement. A typical case of compartmentalized memorization . . . a situation characteristic of other pharmacy courses as well.

On the other hand, a student learning elementary bookkeeping through the use of carefully drawn up practice problem units is given selected transactions with which to work, requiring him to make entries in an actual set of books from which the P & L statement is drawn. He learns to handle the transactions, understand their nature, and acquire experiences. The instructor crystallizes these experiences into accounting concepts, principles, and rules such as posting, debit and credit principle, and trial balance. These principles and rules of bookkeeping become useful experiences in handling and understanding other new and related experiences and principles.

It is our feeling that by using a series of related, contrived experiences or projects *along with* textbook-classroom presentations, the over-all subject matter will be more readily understood and will be translated into meaningful, usable knowledge. We also feel that this type of project or modified "case study" technique will not only develop in the student a sounder approach to the delicate problem of integrating professionalism with the commercialism that is traditionally a part of American pharmacy, but that it will also develop in him the ability to analyze, evaluate, and integrate each individual phase of pharmacy administration, and permit him to draw conclusions and accept responsibility for decisions in much the same way as he would in handling the day-to-day operational problems with which he might expect to be confronted as an owner or manager.

To put the student in a "learning" frame of mind, a summary sheet spelling out the purpose, value, and significance of the management project is distributed to each student. This, in addition to the *modus operandi* of the project, is discussed thoroughly both

in class and in individual conferences. The student learns the "why" of the project . . . what is expected of him, and, even more important, *what he may expect to gain in return*.

The over-all project is divided up into 14 related and integrated reports,\* each covering a separate phase of management and merchandising activity involved in the establishment and operation of the "hypothetical" drugstore set up by the student in Report #1, Site Selection and Location. Instead of dealing with site selection, Financing a New Drug Store or Purchasing a Going Drug Store abstractly . . . from a text or lecture notes . . . the student deals with each problem as though he were actually a practicing pharmacist establishing a "real" drugstore.

In Report #1, for example, a specific shopping area is assigned to each student from the current "N.Y.C. Neighborhood Market Analysis." The student's job is to select a site and location for his proposed pharmacy within the neighborhood assigned, using the report data and questions as a guide. Wherever convenient, the student is required to make an actual inspection of the area just as he would if he were checking the neighborhood for the "real thing." However, where a trip to the trading area is not practical . . . as, for example, in pharmacy schools outside of metropolitan areas . . . the student is expected to search out such neighborhood market data as are necessary in making a choice of site. The report the student submits, including a trading area map and analysis, is not unlike that submitted by the real estate representative of Walgreens or Rexall-Liggett. Classroom discussions of the assigned readings and the main points raised in the reports are reduced to concepts and principles and related to each student's working problem. Examples of the students' reports are available for examination.

Having selected a site for his hypothetical drugstore, the student is confronted with the task of working out the dollar-and-cents details of Report #2, "Financing the Drug Store" (or "Purchasing a Going Drug Store"), in much the same manner as a prospective owner. Basic operating assumptions are provided for in the report. Such matters as the nature and use of capital, capital needs, capital sources and credit, opening expense schedule, break-even volume based on early operating expenses, and capital expenditure needs, sales potential, etc. are handled in terms of the store site selected. The student works up such schedules as capital costs, capital needs, expenses, and time-sales expectancies. With

---

\* Copies of report forms may be obtained by writing the authors.

this report, as with all reports, readings are discussed in class, and appropriate concepts and principles drawn as well as applied.

In Report #3, the student selects a form of business organization for his drugstore. He makes his decision only after the most careful analysis of each type of business organization, in terms of his store needs and capacities. The legal and economic implications and characteristics of each type of organization are thoroughly discussed in class together with practical criteria that students can work with in preparing their report.

Report #4 deals with the "Layout and Planning" of the hypothetical drugstore. Basic principles of store layout and planning are discussed in class and applied by the student to his own store layout problem. The student works out his own variations from the generalizations and principles he starts out with. He chooses fixtures, lighting, flooring, equipment, and front design appropriate to his proposed operation after consultation with dealers participating in the over-all project with the college. Store, stock room, and prescription department layout blueprints and scale drawings are analyzed thoroughly by the student. The abstract theories of departmentalization in store layout, record keeping, and internal control are reduced to practical, usable generalizations to give the student tools to work with.

In Reports #5 and #6, the student treats the problem of buying for his new (or going) store (Buying Policies and Techniques). The student develops buying policies for his drugstore in the light of the factors set up in the reports. He plans his opening and operating inventory and his model stock applying such concepts as turnover, working capital, and cash-budget-ceiling-limit controls. He plans his sales, works with actual consumer preference data, and determines brand policies in terms of his own store problems. He analyzes and evaluates the various sources of supply open to him . . . direct and indirect . . . decides whether he wants to join a voluntary chain or co-op and finally selects his suppliers on a business-like basis.

The student works with the "turnover" concept as a form of internal profit, buying, and stock control factor. He learns how to use practical purchase controls to aid him in planning actual purchases, adjust the flow of purchases and regulate inventory levels. He sets up and operates a store "purchase control budget" and inventory-purchase control system for his Rx department.

In Report #7, "The Use of Financial Controls in the Retail Pharmacy," the student is impressed with the importance of using and applying financial controls to check income and expense accounts. He deals directly with income and expense items, liability

and capital accounts, working capital ratios, sales potential figures, basic inventory, and capitalization needs and controls. He is required to integrate various pieces of financial information beginning with capital needs and expenditures, and expense data which he worked up in Report #2. He develops a "cash budget," develops and analyzes operating ratios, and determines the "break-even" critical points in a volume-expansion period of 12 months.

In Report #8, "Pricing Policies and Techniques," the student deals with typical pharmacy pricing policies, concepts, and techniques. He establishes a price policy for his drugstore in terms of factors outlined in the report. He works out a typical "price lining" problem for a department. He determines gross margin needs for his store and on a departmental basis applying such principles as "group average turnover factor" and "departmental gross margin needs." The student learns how to determine initial markup in terms of his store figures. He works with standard markup formulae and procedures to price his merchandise. In the professional department, the student works out a detailed prescription costing and pricing analysis based on the "Jeffries Universal Rx Costing and Pricing Method."

Report #9 deals with personnel "Personnel Selection, Training and Supervision." The student establishes a pattern for selecting, training, supervising, evaluating, and compensating personnel for his store. In Report #10, "Sales Promotion and Advertising," the student develops a sales-promotion program for his drugstore. He sets up specific promotions in selected departments—a detailed working promotion covering such aspects of the program as planned window and interior displays, advertising and public relations. He develops an advertising and promotional program for the store and the prescription department on a year-round sustained basis.

Report #11, "Window and Interior Display," provides the student with an opportunity to work with and plan window displays for both his professional department and for the store as a whole. In dealing with interior display, the student determines policy with reference to self-service, self-selection, and service sections. He chooses fixtures for each area and illustrates the various types of display techniques . . . open display, gondola, table, wall case, and shelf-end that he intends to use for certain designated merchandise in the various departments. Report #12, "Retail Salesmanship," deals with customer relations and contacts. The student works out a sales or customer-contact pattern that will suit his store. He applies retail-sales principles and techniques to actual customer situations established in the report. He learns how to handle objections, close a sale and employ service-suggestion selling techniques to im-

prove sales volume and give greater customer satisfaction. Slide films, booklets, motion pictures, and dramatizations are used along with classroom discussion of assigned readings to help the student draw usable generalizations in the retail-sales area.

Reports #13, "Operation of the Prescription Department," and #14, "Drug Store Housekeeping," follow much the same pedagogical pattern as the first 12 reports.

In summary, the order and sequence of the projects is on a more or less chronological basis in terms of the steps necessary to establish and operate a new or "going" drugstore. We believe that out of this grows a sense of the logic of the operation of the drugstore and an ability to ultimately grasp an over-all view of the operation and to place each phase in its proper perspective.

With only two years of experience it may be too early to venture a hard and fast opinion on the ultimate efficacy and value of the "project method" generally. However, quarterly evaluation as well as year-end evaluation over the past two years indicates clearly its tremendous effectiveness as a teaching aid. Grades have shown a decided improvement even though the level of the course has been sharply upgraded. Interest in course content is higher than it was formerly, and students appear to have a much firmer grasp of fundamental pharmacy administration concepts and principles. And what is even more important, students are experiencing a sense of integrated totality about the various phases of pharmacy management. They no longer seem to be memorizing separate segments or concepts that have existence only outside the whole context of pharmacy administration.

Classroom discussions, carried on with greater sureness in terms of well-grounded, intelligent abstractions, seem to be sharper, more penetrating, and far more mature than in previous years. And the general level of the reports submitted gives the impression that the student is enjoying a greater sense of satisfaction and achievement in the job he is doing for the course. It might be added that the comprehensive nature of the reports permits the utmost in student achievement evaluation for grading purposes in addition to laying the foundation for follow-up student "report-conferences." Students have, on the whole, reacted magnificently to the introduction of the "seminar" type of project.

As to how much, qualitatively and quantitatively, our graduates of the past two years have gotten out of the report project, how much they have retained and how long, and how useful it has been since graduation, we can only report that repeated alumni contacts on matters directly related to material in the reports give us the feeling that having "lived" the course, as it were, they are finding

the principles, practices, and concepts more usable and practical in approaching and solving their own problems. It is interesting to note that during 1955, at least 45 to 50 sets of the reports or combinations of different reports were distributed not only to graduates, but to practicing pharmacists who have been out of college considerably longer. The most popular report outlines during 1955 were: Report #1, "Locating the Drug Store"—57 requests for copies; Report #2, "Financing the Drug Store" (or "Purchasing a Going Drug Store")—53 requests for copies; Report #4, "Drug Store Layout and Planning"—63 copies requested with plastic worksheet. Reports #6, "Buying and Stock Control," #8, "Pricing Policies and Techniques" (particularly the section of prescription costing and pricing), and Report #9 dealing with "Personnel Selection, Training and Supervision" were also in demand by alumni as well as practicing pharmacists.

---

*Organization is the mother of movement. No group, it will be agreed, can progress without organization. What makes the will of a group effective is that unified action follows only upon close-knit organization and with us pharmacists lack of organization is a weakness. Granted that this condition undoubtedly is due to diversity of interests, it nevertheless has led, on the whole, to our present heterogeneous organizations. These are only loosely effective because all groups are intent on improving themselves in their own individual way and are hesitant about joining in a concerted movement embracing the entire profession.*

Leon W. Richards, Am. J. Pharm. Ed., 2, 267 (1938)

## ENCOURAGING THE DISPENSING OF BUFFERED AND ISOTONIC EYE PRESCRIPTIONS BY PRACTICAL TEACHING METHODS

JEAN BROWN

The demands from the practicing pharmacists throughout the country for information regarding the preparation of isotonic and buffered eye solutions have increased noticeably in the past few years. A great number of the questions asked by members of the American Pharmaceutical Association in the Prescription Information Service of the Practical Edition of their journal pertain to this type of prescription. Many of the colleges of pharmacy are being asked by the pharmacists in their respective states for help on the details of setting up an eye prescription department. Also the graduating seniors find that their knowledge of the practical application of dispensing properly prepared eye prescriptions helps them to obtain better positions and higher salaries.

This is very gratifying to those of us who have been teaching this subject for several years and have felt that it was not being used in the actual practice of pharmacy. It should serve as a stimulus to us to teach the fundamentals of the subject in such a manner that the knowledge can be applied both skillfully and practically. The students should not lack confidence, upon graduation, in their ability to prepare eye prescriptions that are properly compounded.

A survey of the situation clearly establishes the desirability of teaching the detailed techniques of filling eye prescriptions, and the need for devoting a sufficient amount of time in our dispensing courses to adequately prepare the student for this portion of his work.

As teachers of pharmacy we must decide just how much time we should allow for the subject and how deeply we can go into the theories and principles, and yet make them practical and usable. We should always bear in mind that approximately 90 per cent of our students are going into retail pharmacy and that they must be prepared to use the knowledge they have obtained in college immediately upon graduation. They must graduate with the feeling that they can work in any established eye prescription department or can easily set up a small prescription unit when they are given the opportunity. Just how to give adequate information in a limited time and yet establish such confidence is our problem.

We must assume that by the time the students reach the courses in dispensing they are thoroughly acquainted with the principles of isotonicity, pH, buffering, sterilization, and other subjects pert-

inent to the fundamentals of eye prescriptions, and that they are ready for the application of the information previously learned.

In the two, four-hour courses in dispensing at the University of Oklahoma some time is spent, at first, in the preparation of isotonic solutions for the eye. As suggested by most of the texts in dispensing pharmacy, three methods are available: (1) the Osmotic Factor Method, (2) the Freezing Point Method, and (3) the Sodium Chloride Equivalent Method. The individual student may use any one of the three methods that he finds practical for the environment in which he has to work.

Any one of the three is easily explained and logical in the classroom and will be accepted by the student. However, he will become discouraged with the osmotic factor method when he is working at a busy prescription counter and finds he needs a periodic table to find the gram molecular weight of a substance. While the problem involved is not too complicated, the time element must be considered. Also most of the employers will become discouraged with such a procedure and often give up the idea of properly prepared eye prescriptions in favor of other types which require less time and give more volume.

The freezing point method is less complicated. It involves a comparatively easy formula and is preferable to the osmotic factor method as far as time is concerned.

Most of the students consider the sodium chloride equivalent method the most understandable and practical, and, after all three methods are presented, choose it for accuracy and efficiency. This also seems to be the one that makes the most sense to the practical men who are looking for an accurate, time-saving process.

It is important to emphasize at this point the necessity of keeping informed on the research being done in the field of eye preparations. This is absolutely necessary since each advancement seems to simplify the previous procedures as well as improve their accuracy. For example, at one time it was thought that the freezing point of the blood was  $-0.56^{\circ}$  and the lachrymal fluid was  $-0.80^{\circ}$ . For this reason a 1.4 per cent sodium chloride solution was used to make a solution isotonic with the tears, and 0.9 per cent to make a solution isotonic with the blood. Further investigation proved that this was in error; now the problem is simplified and a 0.9 per cent solution of sodium chloride is considered isotonic for both the tears and blood. It is not difficult to keep up with the new material being published on the subject, since this can be done by reading the current monthly journals which are very prompt in giving results of recent research. However, the interest in and the ability to understand this information are greatly stimulated by the background

we provide for each individual in our teaching of dispensing.

After a comprehensive study of isotonic eye solutions, using the substances usually found in this type of prescriptions, the study of buffer solutions is begun. At first this looks as if it might involve the preparation of many solutions which would not seem practical for the average prescription counter. However, we find in the study of the various buffer systems, as worked out by research men in this field, that one carefully chosen buffer solution may give the desired buffer capacity, hydrogen ion concentration, osmotic effect, equilibrium concentration of the free base, and chemical stability for a number of substances used in the eye. This is made possible by the grouping of certain drugs under recommended pH values at which they yield a high therapeutic activity without sacrificing the chemical stability of the solution. Usually, adding enough sodium chloride or equivalent to these solutions can make them isotonic with the lachrymal fluid, thereby producing not only a buffered solution but one that is of the desired tonicity.

In some instances the solution may be recognized to be slightly hypertonic, but, since the eye is able to adjust to these conditions over a rather wide range, this is not considered too important. At least at the present time it is thought to be more important to have the proper buffer solution to enhance the stability and the therapeutic activity of the drug than it is to have a solution that is exactly isotonic with the eye secretions. It has been shown that the eye tolerates, without difficulty, differences in osmotic pressure equivalent to from 0.5 per cent to 2 per cent sodium chloride.

The question then occurs to the students and to many interested pharmacists just how many solutions would it be necessary to keep in stock in order to be adequately prepared to fill most of the eye prescriptions they could expect to receive, and would this require the investment in a large number of expensive ingredients? It would be safe to say that about six buffer solutions would take care of the majority of preparations needed for the eye, and that the ingredients involved would require the investment of a very small amount of money.

It would be necessary to have buffer solutions having a pH of 5, 6.47, 6.8, 8.6, and perhaps two that could be combined in various proportions to obtain a range of various hydrogen ion concentrations and to which varying amounts of sodium chloride could be added, depending on the amount of medications in the solution, to make them isotonic.

These six solutions require only a small expense since the substances involved would include the purchase of only small containers of boric acid crystals c. p., anhydrous sodium acid phosphate,

anhydrous disodium phosphate, sodium chloride c. p., sodium borate .10 H<sub>2</sub>O, sodium sulfite, and a bottle of Benzalkonium chloride and phenyl mercuric nitrate.

It is our responsibility as teachers to give the student a complete picture of the techniques of both isotonicity and buffering, so that he may then review and choose from the various procedures the ones that he would consider using to produce a satisfactory isotonic and buffered solution ready for use in the eye. Then we can expect the student, when he becomes the pharmacist, to be versatile enough in his knowledge of the subject to fit into the various situations that may arise.

The next step we consider in the proper preparation of eye solutions is the problem of sterility. This is receiving a great deal of attention at the present time. This interest was stimulated by publication of the regulation of the Food and Drug Administration in the *Federal Register* of Jan. 15, 1953, in which it gave notice to the manufacturers and repackers of ophthalmic solutions that such solutions should be sterile and that if they were not they would be considered adulterated. While this was not made applicable to the dispensing of these solutions in retail drugstores, it made us realize that we should do everything possible to encourage the improvement of the methods used in the preparation of this type of prescription to control bacterial and fungal growth.

To do this it would be ideal to have equipment which would provide heat-sterilized utensils and bottles, e.g., a glass-enclosed compounding area with an ultraviolet light and some type of bacterial filtration for actual sterilization of the solution. Recognizing the fact that many small pharmacies will not be willing to provide the space or money for this equipment, the question is, what can the pharmacist do to protect the public and provide the best service his knowledge and training will permit and yet not require additional space and expense?

The following outline should provide a practical answer:

(1) Provide a scrupulously clean area, however small, devoted only to the compounding of eye prescriptions. If possible the balances and compounding area should be covered with a glass hood to protect them from dust and floating air particles. This can be easily constructed at very little cost.

(2) Drugs and chemicals used only for eye prescriptions should be kept in this area and separate from materials used for other types of prescriptions. These should be bought in small amounts and properly stored at all times.

(3) When weighing these medications, spatulas passed through a direct flame for not less than 20 seconds should be used (see Process A under Sterilization Processes of the USP), and glass weighing pans that have been exposed the proper length of time to an antiseptic so-

lution, rinsed with sterile distilled water, and wrapped in sterile gauze should be used.

(4) Utensils for measuring, bottles, and droppers may be sterilized by boiling for 15 to 20 minutes (see Process D, Part 2, under Sterilization Processes of the USP), or allowed to stand in a suitable antiseptic solution and rinsed with sterile distilled water, then protected by wrapping in sterile gauze until needed. This gauze is available in any prescription department.

(5) The water used is very important and can be made easily available by buying 1000 cc. bottles of water for injection, inserting a sterile rubber cork with a sterile glass tube on which has been placed a short length of sterile rubber tubing with an attached pinch cock. The bottle may then be inverted and suspended from any type support and is ready for use. Buffer solutions can be made directly in the 1000 cc. bottles of water for injection, thereby providing a sterile buffer solution ready for use.

(6) A solution of 1:3000 Benzalkonium chloride may be used effectively as an antiseptic solution.

(7) After the solution is prepared, an antibacterial agent should be added for further protection. It should be the duty of the pharmacist to keep well informed as to which are the most effective and the least irritating. He should be alert to any incompatibilities that might occur with other ingredients in the prescription. Also the physician should approve the use of these substances in his prescriptions.

The outline given above should not be objectionable to any pharmacist regardless of limited space and finances. It will require some additional time, but the public will be happy to pay a higher fee for a service that involves the proper care of the eyes. The application of the knowledge involved in producing this type of prescription is worthy of a professional fee higher than that charged for the ordinary solution.

The above discussion emphasizes the fact that the correct filling of compounded prescriptions involves more than is evident to those not familiar with the dispensing of drugs. It is our duty as teachers of pharmacy to firmly encourage the student to take great pride in the compounded prescriptions, regardless of their decrease in number, as a symbol of his professional skill. He must be made to realize that in performing this duty properly he can be of great service to the health professions and the public. For where can he give a service of more value than that which protects the eyes of the nation? Each prescription should be filled with as much care as it would be if it were to be used in the eyes of the individual who fills it. Perhaps nothing could make the pharmacist more conscious of its importance than to proceed as if this were true.

## PROCEEDINGS OF THE AMERICAN FOUNDATION FOR PHARMACEUTICAL EDUCATION

MARCH 1, 1956

### MINUTES OF THE ANNUAL MEETING OF MEMBERS

The Annual Meeting of the Members of the American Foundation for Pharmaceutical Education was called to order by President Kerrigan at 10:15 A.M.

The Secretary announced the proxy holders for Member Associations, as follows, all of whom were present except Mr. Bellis: AACP, Joseph B. Sprowls; ADMA, Karl Bambach; A.Ph.A, Robert P. Fischelis; APMA, J. O'Neill Closs; FWDA, none; NABP, Wilbur E. Powers; NACDS, Carl Willingham; NARD, Edgar S. Bellis; NWDA, none; The Proprietary Assn., James F. Hoge.

The following Directors were present: Alvin G. Brush, Francis C. Brown, John L. Davenport, Richard A. Deno, Charles D. Doerr, H. A. B. Dunning, Howard B. Fonda, J. Mark Hiebert, James J. Kerrigan, Smith Richardson, Jr., Hugo H. Schaefer, Linwood F. Tice, John J. Toohey, Charles R. Walgreen, Jr., George L. Webster, Edward T. T. Williams, Louis C. Zopf. The following Directors were represented by proxy: George B. Burrus, F. S. Dickenson, Jr., J. Preston Levis, Eli Lilly, O. J. May, John G. Searle, George F. Smith, Ernest H. Volwiler.

On motion Fonda-Walgreen, the Minutes of the Meeting of Members, March 3, 1955, were approved.

The Secretary announced the names of Directors whose terms expire as of the date of this meeting as follows: Alvin G. Brush, Hugo H. Schaefer, Ray C. Schlotterer, Charles R. Walgreen, Jr., George L. Webster.

The Secretary also presented the resignation of Director W. L. Dempsey. Mr. Dempsey submitted his resignation because he is no longer in active management of Sharp & Dohme.

In the absence of Chairman Swain, Mr. Smith Richardson, Jr., presented the Report of the Nominating Committee, recommending the re-election as Directors, for five-year terms expiring in 1961, of the following Directors: Alvin G. Brush, Hugo H. Schaeffer, Charles R. Walgreen, Jr., and the election, also for a five-year

term, of: John A. Crozier, and Richard A. Deno.

The Nominating Committee recommended acceptance of the resignation of Director Dempsey with appreciation for constructive service but with regret. To fill the remainder of his term of office, expiring in 1958, the Committee recommended the election of John G. Bill. Members of the Nominating Committee were: John L. Davenport, W. Rutherford James, Smith Richardson, Jr., John J. Toohy, and Robert L. Swain, Chairman.

On *motion* Zopf-Doerr, nominations were closed and the Secretary instructed to cast a unanimous ballot for re-election and election of these Directors as recommended by the Nominating Committee.

The Secretary announced that Louis C. Zopf would serve as Director by virtue of occupying the office of Chairman of the Executive Committee and that the new Secretary-Treasurer of the American Association of Colleges of Pharmacy, to be elected at the 1956 meeting of the AACP, following such election, would become a Director by virtue of holding that office.

There being no further business, the meeting adjourned on *motion* Willingham-Fischelis, at 10:45 A.M.

Respectfully submitted,  
W. Paul Briggs, Secretary

#### MINUTES OF THE MEETING OF THE BOARD OF DIRECTORS

The Annual Meeting of the Board of Directors of the American Foundation for Pharmaceutical Education was called to order by President Kerrigan at 10:45 A.M.

On *motion* Brown-Toohy, Minutes of the following meetings, all previously approved by mail vote, were formally approved: Board of Directors, March 3, 1955; Executive Committee, March 31 and October 5, 1955; Board of Grants, April 26, 1955.

President Kerrigan reviewed the growth and substantial accomplishments of the Foundation. He expressed appreciation for the increasing support being received from all segments of the trade and industry. Mr. Kerrigan emphasized the importance of the Foundation in the interest of the public and all phases of pharmacy. He predicted that the Foundation's services to pharmaceutical education would expand in the years ahead. Mr. Kerrigan called the Foundation "an indispensable instrument for the progress of pharmacy."

He thanked the Directors and Members for their continuing interest and support to the Foundation. President Kerrigan extended special appreciation to his officers and the members of the Executive and Finance Committees for their enthusiastic and effective work during the year.

The report was accepted with appreciation on *motion* Davenport-Tice.

The Secretary presented his Annual Report, which was received and approved on *motion* Toohy-Walgreen.

Mr. Fonda expressed the opinion that the Secretary's Report should be distributed to all Patrons to provide detailed information on the programs and accomplishments of the Foundation. Dean Schaefer suggested that the report be printed, but the majority view seemed to be that mimeograph presentation would probably receive better attention. *Motion* by Fonda-Toohy, directed distribution of the report. The report will be distributed, with a covering letter to all Patrons and friends, about March 15.

This discussion led to consideration of better methods of telling the story of the Foundation to the drug trade and industry. Mr. Williams and Mr. Brush urged preparation of a special promotion piece with pictures and biographical notes on Scholars and Fellows. Mr. Brown pointed out the value of intra-company distribution and use of this type of promotion, as well as of the Spring Report and Roster. Mr. Doerr and Mr. Toohy suggested that in developing this item emphasis be laid on the people the Foundation serves, rather than on the Patrons supporting the Foundation. No formal action resulted from this very constructive discussion, but assuming general approval of the Directors, the office will try to develop a new type promotion piece embodying the suggestions made.

Treasurer Fonda presented the Annual Report of the Finance Committee, the Treasurer, and the proposed Budget for 1956-57. On *motion* Brown-Doerr, the Reports and the Budget were received and approved as presented.

Treasurer Fonda also reported on the February 9, 1956, meeting of the Finance Committee with the Investment Agency (City Bank Farmers Trust Company, New York City). He stated that the Finance Committee concurred in the Bank's recommendation that, in view of the present market, holdings of common stock be carefully and gradually increased to about 35 per cent of the total portfolio. On *motion* Doerr-Davenport, the Board endorsed this action of the Finance Committee.

Mr. Smith Richardson, Jr., reporting for the Committee on Nominations consisting of: John L. Davenport, W. Rutherford James, Smith Richardson, Jr., John J. Toohy, and Robert L. Swain,

Chairman, presented the following recommendations with the unanimous approval of the Committee: President, James J. Kerrigan; Vice President, Francis C. Brown; Treasurer, Howard B. Fonda; Counsel, James F. Hoge; Secretary, W. Paul Briggs. Elected members of the Executive Committee: Charles S. Beardsley, Richard A. Deno, Charles D. Doerr, H. A. B. Dunning, Harry J. Loynd, Hugo H. Schaefer, Robert L. Swain, Charles R. Walgreen, Jr. Member of the Board of Grants for five-year term: A. J. Brumbaugh.

There being no further nominations, on *motion* Zopf-Toohy, nominations were closed and the Secretary instructed to cast a unanimous ballot for all nominees as presented by the Nominating Committee.

The President reappointed all present members of the Finance Committee. The Board endorsed this action and expressed appreciation for the past services of the members: L. D. Barney, Alvin G. Brush, Charles D. Doerr, James J. Kerrigan, Charles R. Walgreen, Jr., and Howard B. Fonda, Chairman.

On *motion* Doerr-Davenport, the following resolution was approved:

("*Resolved*, that the Secretary is hereby authorized to certify to The First National City Bank of New York and the City Bank Farmers Trust Company of New York, the names of the Officers of the American Foundation for Pharmaceutical Education elected at the Annual Meeting of the Board of Directors of the Foundation on this March 1, 1956, and the names of the appointed members of the Finance Committee.")

AACP Secretary Deno presented a report on the Association's Student Recruitment Program. The Board accepted the report with appreciation on *motion* Zopf-Tice.

Mr. Walgreen spoke on the possible opportunities to secure gifts to the Foundation to establish memorial programs, if the Board would provide an outline of requirements, costs, offerings, etc. The general idea was endorsed by Toohy, Dunning and others, and on *motion* Schaefer-Walgreen, the Board approved the proposal in principle and requested the Executive Committee to study and report on the matter.

Dean Zopf referred to the growing need for scholarship grants without the necessity for "matching money" as now required to obtain AFPE awards. This suggestion will be reviewed by the Executive Committee.

There being no further business to come before the meeting, President Kerrigan called upon Dr. Deno to present the first AACP recruitment film "Design for Life." The film was well received

by the Directors and appreciation extended to the Committee members for their services in this important program.

The meeting adjourned at 12:10 P.M. for the annual Appreciation Luncheon attended by over 100 Patrons and friends of the Foundation.

Dr. J. Douglas Brown, Dean of the Faculty, Princeton University, addressed the gathering on the subject "Creative Manpower."

Respectfully submitted  
W. Paul Briggs, Secretary

#### **ANNUAL REPORT OF THE FINANCE COMMITTEE**

The Finance Committee has approved a budget of \$262,250 for 1956-57 and the Committee recommends approval by the Board. While adequate to provide for all current programs, it is a very tight budget, and cannot be stretched to cover any additional activities or increased costs in present programs.

This budget contains \$45,000 as a non-recurring expense for the remainder of the American Association of Colleges of Pharmacy student recruitment program. With this payment the Foundation will have contributed \$100,000 to this important effort. It is anticipated that future budgets will be held to a maximum of \$225,000 which closely approximates estimated gross annual income.

The Finance Committee solicitation campaign for 1956 funds was opened on November 21, 1955. As of February 15, 1956, contributions from 119 Patrons amounted to \$108,915. It is expected that, during the year, additional contributions from annual Patrons will amount to \$66,000. Through continuing efforts it is hoped that 1956 contribution income will reach \$185,000.

The Committee expresses its special appreciation to Vice-President Francis C. Brown and Mr. L. W. Frohlich for their valued services in enlisting support to the Foundation for the advertising agencies and related services.

The Committee is pleased to report that annual contribution income has shown slow but steady increases in recent years:

1950—\$114,000	1952—\$148,730	1954—\$167,680
1951—120,000	1953—163,100	1955—170,250

Also, that our Patrons have increased in number from 110 in 1950 to 168 in 1955. Based on evidence to date it appears likely that 35 or more new Patrons will be acquired in 1956.

The Investment Program of the Foundation is receiving constant attention and it is believed that our portfolio is well balanced in relation to the current market. As indicated in the Treasurer's Re-

port, our conservative investment program may be expected to yield annual income of approximately \$47,000.

We hope for additional gifts to the Foundation, and resultant increases in annual investment income. By thus supplementing annual contribution income, we may soon achieve a gross annual income that will equal our essential financial support to pharmaceutical education and enable the Foundation to operate on a balanced budget.

Respectfully submitted,  
Finance Committee

(L. D. Barney, Alvin G. Brush, Charles D. Doerr, James J. Kerri-gan, C. R. Walgreen, Jr., Howard B. Fonda, Chairman.)

#### ANNUAL REPORT OF THE TREASURER

The Treasurer submits as his report to the fourteenth Annual Meeting of the American Foundation for Pharmaceutical Education the Reports of the Auditors, R. G. Rankin & Company, for the budget year ending August 31, 1955, and for the first half of the current budget year (September 1, 1955-February 15, 1956). Copy of each is attached as part of this report. It will be noted that we closed the 1954-55 budget year with an unexpended balance over appropriation of \$10,714.85.

We are operating within the 1955-56 budget, with cash on hand as of February 15, 1956, of \$112,848.56.

We hold at The First National City Bank of New York 250 shares of company stock valued at \$8,600, the interest from which is credited as the donor Patron's annual contribution.

In accordance with directions of the Board of Directors, the City Bank Farmers Trust Company of New York is engaged to act as Investment Officer of the Foundation, subject to approval by the Finance Committee.

Our investment portfolio as of February 15, 1956, is valued at \$1,434,194 and is diversified approximately as: United States Government Obligations 32%; Other Bonds 24%; Preferred Stocks 16%; Common Stocks 28% and Annual income therefrom, under current conditions, is estimated at about \$47,000 representing a return of 3.33% based on current value of the securities.

An informal review of the books and records in the Secretary's office, as of February 15, 1956, indicates maintenance of adequate records on, and safeguards for, the funds of the Foundation.

Howard B. Fonda, Treasurer

**BUDGET**  
(September 1, 1956-August 31, 1957)

**Educational**

Graduate Fellowships and Teaching Fellowships ....	\$105,000.
(including the S. B. Penick Memorial Fellowships)	
Gustavus A. Pfeiffer Memorial Research	
Fellowships .....	10,000.
Undergraduate Scholarships .....	18,000.
The American Council on Pharmaceutical	
Education .....	25,000.
Teachers' Seminars .....	7,000.
The American Journal of Pharmaceutical Education	5,000.
Newcomb Memorial Awards .....	750.
American Association of Colleges of Pharmacy	
Student Recruitment Program .....	45,000.
	<hr/>
	\$215,750.

**Board of Grants**

Honoraria (Academic Members only) .....	2,000.
Meetings, Travel (Academic Members only) .....	400.
	<hr/>
	\$ 2,400.

**Board of Directors**

Meetings, Travel (Academic Members only) .....	600.
Annual Patrons' Appreciation Luncheon .....	1,400.
	<hr/>
	\$ 2,000.

**Administration**

Salaries, Deferred Compensation, Taxes .....	32,400.
Office Rent, Light, Equipment .....	1,500.
Travel .....	3,500.
Auditing .....	500.
Office Operating Expenses .....	4,200.
	<hr/>
TOTAL .....	\$ 42,100.
	<hr/>
	\$262,250.

**ANNUAL REPORT OF THE SECRETARY AND  
EXECUTIVE DIRECTOR**

This is my sixth Annual Report to the Members and the Board of Directors, covering the fourteenth year of constructive service of the American Foundation for Pharmaceutical Education.

**Programs**

The following programs, approved by the Board of Directors and provided for in the budget, have been supported by the Foundation: Graduate Fellowships, Teaching Fellowships in Business Administration, Undergraduate Scholarships, The American Council on Pharmaceutical Education, Teachers' Seminars, The American Journal of Pharmaceutical Education, The E. L. Newcomb Memorial Awards, The S. B. Penick Memorial Fellowships, The Gustavus A. Pfeiffer Memorial Research Fellowships, and the American Association of Colleges of Pharmacy Student Recruitment Program.

<i>Graduate Fellowships.</i>	Total graduate Fellowships	
awarded 1956—February, 1956 .....	347	
Fellowships awarded 1955-56 academic year at		
29 universities .....	79*	
34 new Fellowships		
2 new Teaching Fellowships		
41 renewed Fellowships		
2 renewed Teaching Fellowships		
Total AFPE Fellows graduated 1947 to February 1956 ..	245	
Degrees received :		
Ph.D. .....	191	
M.S. .....	48	
M.B.A. .....	5	
D.Sc. .....	1	

It is considered significant that AFPE Fellows remain in the field of pharmacy and are currently distributed:

- 157 as teachers in 72 U.S. and 19 foreign colleges of pharmacy.
- 67 as research, production and development workers in 23 U.S. and 4 foreign, drug and chemical manufacturing companies.
- 16 in pharmaceutical services with the U.S. Army and Navy, Public Health Service, other U.S. Departments, professional associations, etc.

\* (67 active Fellowships as of February 1956)  
6 summer session awards to full-time teachers completing Ph.D. requirements.

1 received Ph.D. degree in August and 1 in December, 1955.

4 awards cancelled due to call to military service or other reasons.

6 in the practice of pharmacy.

4 are unclassified.

10 are pursuing graduate studies but are not currently holding an AFPE grant.

These data provide impressive evidence of the productiveness of the Foundation's program in support of graduate education in pharmacy and related fields. This is the basic program upon which all other educational efforts rest. The infusion of 157 new, Foundation-supported Fellows, into our teaching ranks has contributed a major share toward the progress of pharmaceutical education since 1947. But the need for more and better teachers has not been satisfied, so that this Foundation program should not only be continued, but expanded as soon as funds permit.

*Undergraduate Scholarships.* AFPE undergraduate scholarship grants are available annually to all Class A Colleges of Pharmacy, in amounts equal to new "matching" money raised by each College, up to \$400.

The Board of Grants allocated \$19,498 for undergraduate scholarships to fifty-one colleges of pharmacy, for the academic year 1954-55, providing for 139 awards at an average cost of \$140 per student.

During the current academic year (1955-56), awards totaling \$17,309 have been made to forty-eight colleges of pharmacy. Some additional awards will probably be made during the remainder of the year.

Between 1942 and June 1955, AFPE undergraduate scholarships have aided 1,201 pharmacy students to complete their education. These awards are highly productive and should be maintained as an aid in achieving an adequate output of pharmacists.

*The American Council on Pharmaceutical Education.* The Council issued a revised list of Accredited Colleges of Pharmacy, as of July 1, 1955, showing sixty-nine colleges rated Class A; two Class B; and three Class C. The list will again be revised on or before July 1, 1956.

The council continues to serve as one of the vital forces in advancing pharmaceutical education, and fully justifies Foundation support.

*Teachers' Seminars.* Seven annual Teachers' Seminars have been held by the American Association of Colleges of Pharmacy. These have been attended by representatives from practically every college of pharmacy. The programs have been well planned, and this refresher training for teachers is highly productive and worthy of continued support by the Foundation. The 1956 Seminar on Pharmacy Administration will be held at the University of Texas.

*The American Journal of Pharmaceutical Education.* The Journal serves a distinctive, useful function, and since it probably cannot be self-supporting, should continue to receive aid from the Foundation.

*The E. L. Newcomb Memorial Awards.* The 1955 Newcomb Awards went to Magdalena Cantoria, Massachusetts College of Pharmacy, for her essay, "A Pharmacognostical Study of the Root of *Rauwolfia vomitoria*"; and Dr. E. H. Djao, College of Pharmacy, University of Washington, for his essay, "A Study of Acetate in Growth and Glycoside Formation in *Digatilis purpurea*."

Continuance of this program is provided for from interest on funds transferred to the Foundation from the Special Committee of the Drug and Related Industries to honor Dr. E. L. Newcomb and an equal amount set aside by the Foundation.

The Foundation is indebted to Drs. George M. Hocking, John E. Seybert, and Heber W. Youngken for their services on this Committee, and especially to Dr. Youngken for acting as Chairman.

*The S. B. Penick Memorial Fellowships.* The Board of Grants renewed, for 1955-56, the Penick Fellowships held by: Eugene Walter Alpern, at the University of Michigan, majoring in pharmaceutical chemistry, and John David Hensala, at the University of Maryland, majoring in pharmacology.

*The Gustavus A. Pfeiffer Memorial Research Fellowships.* These Fellowships are designed to encourage pharmacy faculty members to engage in sound, original investigations, either as full-time research projects, or as substantial, thorough, part-time projects, in conjunction with a teaching assignment.

1955-56 Gustavus A. Pfeiffer Memorial Research Fellowships were awarded to: Dr. Roy Kuramoto for research studies at Columbia University, and Dr. W. Lewis Nobles for research studies at the University of Mississippi.

*American Association of Colleges of Pharmacy Student Recruitment Program.* To date the Foundation has advanced \$55,000 in support of this project.

A special preview showing of the new student recruitment film "Design for Life" will be presented later at this meeting. Directors Deno and Doerr are serving on the AACP Committee developing this project, and Dr. Deno will present a progress report on the entire recruitment program of the College Association.

#### **Contribution Income**

Annual contribution income has shown a slow but steady increase each year for the past five years: from \$114,000 in 1950, to \$170,250 in 1955. (While we operate on a budget year from September 1 to August 31, we count contribution income on a calendar

year basis for the convenience of Patrons. Thus all contributions received after our annual solicitation at Thanksgiving time are credited to the following calendar year.)

During the year we acquired five new Patrons and our total Patrons have increased in number from 110 in 1950, to 168 in 1955, with average annual contributions of slightly over \$1,000 each.

With a budget for 1956-57 of \$262,250 it is obvious that we must further increase our annual contribution income by additional support from the trade and industry.

Progress is being made toward this end. Last year eight Patrons increased their rate of contribution, several quite substantially. Six other Patrons have materially increased their contribution rate this year, and there is good reason to anticipate additional increases as remaining 1956 contributions are received over the next few months.

Through the interest and initiative of Vice-President Brown, Mr. L. W. Frohlich, President of L. W. Frohlich and Company, and then President of the Association of Medical Advertising Agencies, graciously undertook to enlist support to the Foundation from the advertising industry and its supporting services. Members of that industry responded to Mr. Frohlich's invitation and to date we are happy to count twenty-three new Patrons from the advertising industry and related fields.

#### **Investment Program**

Our investment program was approved by the Board of Directors on October 5, 1954. On November 18, 1954, the Investment Advisory Service of the City Bank Farmers Trust Company of New York was engaged for this purpose. The AFPE Finance Committee was authorized to act for the corporation, and Mr. Brush and Mr. Kerrigan were empowered to act for the Committee. The Foundation is indebted to each member of the Finance Committee for their valued services in developing this productive income producing program.

As reported by Treasurer Fonda and the Finance Committee, it is hoped that our investment portfolio will yield annual income of approximately \$47,000.

#### **Operating Cash Position**

Cash on hand as at February 15, 1956, amounted to \$112,848.56.

If delayed 1956 contributions are received in hoped for amounts, it is believed we can continue to operate on a cash basis without drawing upon reserve funds.

**Budget**

The Finance Committee has developed a cushion-free budget of \$262,250 for 1956-57, which will meet the immediate basic needs in support of pharmaceutical education. While it exceeds the current budget by about \$11,000, it cannot be lowered without sacrificing some of the essential activities to which the Foundation is committed.

The 1956-57 budget contains the last of three annual contributions to the American Association of Colleges of Pharmacy in support of their long-range quality-student recruitment program. The Foundation has already contributed \$55,000 to this effort, and the recommended budget for 1956-57 provides for an additional \$45,000 to complete this project.

When this non-recurring and costly program is completed, it is hoped that future budgets can be kept down to our anticipated gross annual income.

**1954-55 Budget Year**

As reported by the Treasurer, from the year end Report of the Auditors, we operated during 1954-55 within the approved budget, and closed the year with an unexpended balance of \$10,714.85.

**General**

A specially prepared article "I'll Take Pharmacy" was printed by McKesson & Robbins, Inc., in January last year, and 75,000 copies made available, without cost to the Foundation, as an additional stimulus to student recruitment.

The 1955 Spring Report to Patrons was distributed in May. This booklet was designed and printed, without any cost to the Foundation, by Medical Economics, Inc. For this important contribution to the Foundation we are indebted to Mr. Albert B. Miller and Mr. William L. Chapman, Jr. I am very happy to report that Medical Economics has already volunteered to prepare our 1956 Spring Report.

The 1955 Roster was issued in September.

Also in September, the article "Should Your Child be a Pharmacist?" appeared in the *Ladies Home Journal*, the *Saturday Evening Post*, and *Collier's*.

This advertisement was presented in the public interest by New York Life Insurance Company at an estimated cost of about \$95,000. The combined circulation of the three magazines is said to be about 14,000,000 with potential readership over 35,000,000. We are grateful to Mr. Charles D. Doerr for his services in ar-

ranging to have pharmacy included in this New York Life Insurance Company career series.

New York Life originally prepared 500,000 reprints of the story and these have been distributed through drug stores, colleges, and high schools. A second printing of 100,000 copies has recently been made and widespread distribution of the booklet is continuing. Several firms have secured permission to reproduce the entire article in local newspapers to stimulate interest in pharmacy as a career in their trading area. It will also appear in the company magazine of Walgreen Drug Stores in March.

In October, 1955, a feature article on the Foundation appeared in *The Merck Report*. We are grateful to President Kerrigan and Editor William E. Kraft for this very helpful publicity for the Foundation.

"Pressing Forward," a report on the works of the Foundation, was published in the October, 1955, issue of *American Professional Pharmacist*.

The Spring Report, Roster, "Should Your Child be a Pharmacist," "I'll Take Pharmacy," and *The Merk Report* have been distributed to all Patrons, prospects, colleges, pharmaceutical associations, and drug press, etc. The Roster is also sent to each Fellow.

Since the last Annual Meeting, the Secretary attended the following listed meetings and delivered addresses as indicated: April 14, "The Remaining One-third," American Drug Manufacturers Association, Boca Raton, Florida; May 2-5, American Pharmaceutical Association and American Association of Colleges of Pharmacy, Miami Beach, Florida; May 18, "The Eloquence of Evidence," Dedication Ceremonies, University of Illinois College of Pharmacy, Chicago, Illinois; May 23, The Proprietary Association, White Sulphur Springs, West Virginia; June 6, American Pharmaceutical Manufacturers' Association, White Sulphur Springs, West Virginia; August 8, AACP Teachers' Seminar, Butler University, Indianapolis, Indiana; August 29, Lilly Industrial Seminar, Eli Lilly and Company, Indianapolis, Indiana; September 19, Federal Wholesale Druggists' Association, White Sulphur Springs, West Virginia; October 17, National Association of Retail Druggists, Atlantic City, New Jersey; October 21, National Pharmaceutical Council, Atlantic City, New Jersey; October 27, The Industrial Council (Panel Member), Rensselaer Polytechnic Institute, Troy, New York; October 31, NABP-AACP Conference, District No. 2, Washington, D.C.; November 7, National Wholesale Druggists' Association, White Sulphur Springs, West Virginia; December 5, National Drug Trade Conference, New York, New York; February 4, "Fill the Funnel,"

Conference of State Pharmaceutical Association Secretaries, Washington, D.C.

It is believed a review of the activities and accomplishments of the Foundation during 1955 again justifies reporting progress in supporting pharmaceutical education. These constructive achievements are made possible by the encouragement and financial support of the drug trade and industry, and the unselfish, devoted services of your Officers and our several Boards and Committees. Special thanks are extended to the Members of the Board of Grants; Ernest Little, A. J. Brumbaugh, Daniel Z. Gibson, Charles J. Lynn and Robert Lincoln McNeil, for their important and valued services in the selection of graduate Fellows.

The Secretary extends sincere appreciation to each Director and Member for their guidance and support, especially to President Kerrigan, Vice President Brown, Treasurer Fonda and Counsel Hoge for their generous and constant services; and to the Executive Committee for effective direction throughout the year.

Respectfully submitted,

W. Paul Briggs  
Secretary and Executive Director

---

*Our graduates should have an enthusiasm for the profession, a knowledge of its problems, and an understanding of their responsibility to it and to the public. They should be taught to consider what they can do for pharmacy as well as what pharmacy can do for them. They should be able to interpret pharmacy to the world graciously, with dignity, honestly and well.*

Hugh C. Muldoon, Am. J. Pharm. Ed., 2, 476 (1938)

## EDITORIAL

"Of all the educational requirements for pharmacy, practical experience is the one which is the most highly unsatisfactory and is the one in which we have made least progress in bringing it up to the proper standard." Dr. Swain made that statement to the Convention of the National Association of Boards of Pharmacy in 1940. And the tragedy is that he could say it again today, sixteen years later, with equal veracity!

In this issue there is an article by Dr. Lichtin on pharmacy apprenticeship and various State Board's views of apprenticeship. Historically the problem of practical experience has been one of the NABP. One wonders if the words of Pericles might not apply; "Some other is more fit."

Dr. Fischelis seems to have gotten the ball rolling with the NABP in 1940 with his "Proposed Minimum Standards for Enforcement of the Practical Experience Requirements." At the convention that year and years to follow the favorite pastime of the Boards seemed to be that of taking polls of states adopting those requirements and splitting microscopic hairs on wording. The NABP standards were revised in 1946 and 1947, but always one is impressed by the lack of attention to *what is being taught* the apprentice. Standard 8 in the 1947 revision requires that "The individual obtaining practical experience shall keep a notebook properly certified to by the pharmacist supervising the practical experience covering the details of his practical training, and this notebook shall be submitted as a part of the application for the Board Examination."

Of all the standards this standard appears to be the one of least importance to the NABP. To any educator it should be the most important. For in this requirement is embodied *what an apprentice is to learn*. The standard is no standard; it simply requires "a notebook" be submitted. The earthy question may be put, "A notebook comprised of exactly what training?" Possibly the boards do not wish to delineate the practical training further. One might well gain this opinion in the remarks of Mr. Schrepel to the NABP convention last year:

We believe it well to maintain more supervision over those obtaining their one year of experience, and that some sort of outline

be prepared as a guide to the employer setting forth the objectives of the program and broadly delineating their respective responsibilities . . . However, no program should be unnecessarily burdened with details; . . . supervision should only be in a broad sense.

The weakness of the suggestion becomes obvious in the wording "some sort of program" and "no program should be unnecessarily burdened with details." No wonder Dr. Elliott in The General Report of the Pharmaceutical Survey very succinctly stated, ". . . as now organized and operated, the requirement of practical experience serves distinctly professional purposes only to a minor degree." Further, the recommendations of the Survey state, "It is recommended to the National Association of Boards of Pharmacy that the present requirements for practical experience as to a prerequisite for licensure be modified to be of more practical value or else abolished."

Are the Boards to blame for this quagmire into which practical experience has languished? At first glance, yes; actually, no. I think one must recognize apprenticeship as not merely a legal hurdle for licensure, but as an educational process. The Boards are not educators, and very rightly they have not presumed to make themselves designers of educational techniques. But one wonders why they haven't thrown the ball our way long ago. But what is even more appalling, why have we educators let them dribble in one spot so long with a problem which is obviously ours.

What about the record of the AACP?

Peace, peace! he is not dead, he doth not sleep—  
He hath awakened from the dream of Life. (Milton)

Dr. Webster in 1949 as chairman of the Curriculum Committee rubbed the Association's eyes and bowed in the direction of the problem with the following: "This Committee believes that a way to achieve values of professional significance from the so-called 'practical experience' is for the college of pharmacy to assume the responsibility for the achievement of the objectives, select suitable retail stores in which they may be obtained, appoint staff members to supervise the training, and accept the values as elective credit toward graduation."

It's not like Dr. Webster just to bow at anyone or any problem. He vindicated this appraisal in 1951 when his report of the Curriculum Committee was devoted largely to the problem. The charge to educators is embodied in the section "General Principles":

The college of pharmacy faculty must take the initiative in developing the program. It must (a) determine the objectives to be achieved by the student, (b) organize a program by which these objectives may be achieved, (c) seek out qualified and willing preceptors, (d) orient the preceptors within the program and inform

them of their duties and responsibilities, (e) provide for adequate supervision of the program, the students and the preceptors, (f) provide means of evaluating the results of the program, (g) assign suitable collegiate credit for the program.

Those were the principles of a detailed program outlined by that committee. What has the Association done? If the accusation of splitting hairs and poll-taking can be applied to the Boards, one can say the Association hasn't even recognized the hair growth or opened the polls! If the NABP can be accused of only wiggling toward an ill-defined goal, the Association is vulnerable to the charge of exerting one strong thrust in the right direction and almost complete prior and subsequent immobility.

This is written before the Detroit meeting, but I hope the recommendation in Dr. Park's Curriculum Committee report presented there is not ignored. It represents at least an opening wedge to reconsider and to act on the problem. In the final paragraph of the advance copy of this report, Dr. Parks states, "We do wish to suggest to the Executive Committee that a joint consideration of this problem (practical experience—Ed.) by the AACP Committee on Curriculum and the NABP Committee on Practical Experience Requirements, or other suitable NABP committee might be feasible and fruitful."

Let us hope that such a joint committee will have the common physical properties of joints in that both sides of the joint move for the benefit of the body and may they be given the admonition of Isaac Watts:

And 'tis a poor relief we gain,  
To change the place, but keep the pain.

I hope this committee will have a ringing in its ears of the terse recommendations of the Survey and of the conclusion of a student (Robert Edlin) who made a survey of other students in his school (University of Cincinnati): "The present apprenticeship system in many states has been or will be responsible for turning away many good students from pharmacy into more stimulating fields."

Melvin R. Gibson

---

*The colleges of pharmacy have a responsibility and an opportunity. They can advance the profession or retard its progress as they will.*

L. Wait Rising, Am. J. Pharm. Ed., 3, 256 (1939)

## ANNOUNCEMENTS

**Mathematics Institute.** The Institute for Teachers of Collegiate Mathematics sponsored by the National Science Foundation will be held at the University of Michigan for eight weeks, June 25 to August 15. Its purpose is to aid in the strengthening and enrichment of undergraduate mathematics instruction by providing for the members contact with enthusiastic and productive mathematicians, instruction in modern developments in mathematics, and discussions of classroom techniques and of new curricula by experienced teachers, innovators, and fellow members. For further information requests should be addressed to Professor T. H. Hildebrandt, Director, 3012 Angell Hall, University of Michigan, Ann Arbor, Michigan.

**Educator rates for publications.** The education director of Time Inc. reminds all educators of special rates available for subscriptions to *Time*, *Life*, *Fortune*, and *Sports Illustrated*.

**ACPE announcement on change in standards.** According to a decision of the American Council on Pharmaceutical Education which is recorded in the minutes of the Council meeting held on January 4-5, 1956, "No College of Pharmacy will be eligible for accreditation on and after July 1, 1960 unless it provides an overall five year educational program."

This action supports and is in harmony with the actions previously taken by the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy relative to the establishment of a five-year program of pharmaceutical education and the completion of such a program as the minimum requirement for graduation.

The Council has also taken initial steps to provide for making necessary alterations in its standards. Proposed changes and revisions will be made known to the Boards and colleges of pharmacy and others who may be interested, and all will be given an opportunity to express their views relative thereto.

**Workshop for college professors.** The University of Michigan will offer its fourth annual Workshop for College Professors from June 25 to July 13, 1956. Features include presentations by a special workshop staff, discussions, and projects related to individual members' needs.

The Workshop will be directed by Algo D. Henderson, professor of higher education, assisted by John E. Milholland, assistant professor of psychology, and James M. Davis, assistant professor of education and director of the International Center, University of Michigan. Other University faculty will be available as resource persons, especially to assist individuals to develop new ideas and fresh materials for their academic courses.

Members of the special staff for the Workshop are Benjamin Bloom, University Examiner, University of Chicago; Frank R. Kille, dean of the college, Carleton College; and Tremaine McDowell, chairman, Program in American Studies, University of Minnesota. They will discuss such topics as course planning, teaching techniques and evaluation.

The Workshop will be followed by an Institute on College Administration, July 16 to 20. Additional information may be obtained by writing to the Director, Algo D. Henderson, 2442 U.E.S., University of Michigan, Ann Arbor, Michigan.

**General Assembly of the International Association for the History of Pharmacy.** The International Association for the History of Pharmacy will meet in Berne, Switzerland, for its General Assembly from September 6 to September 9, 1956, upon invitation of the Swiss Pharmacy Association. This assembly will be held in conjunction with an International Congress for the History of Pharmacy in memory of the Centennial of Prof. Alexander Tschirch, commemorating also the 30th year of the Association and its President for many years, Prof. J. A. Häfliger. The provisional programme provides:

Thursday, September 6: Arrival of the congressists, conducted sightseeing in Berne, meeting of the board, informal evening reunion.

Friday, September 7: General Assembly of the Association, scientific lectures (morning and afternoon), Public Session of the International Academy for the History of Pharmacy (evening).

Saturday, September 8: Scientific lectures, excursion with evening reception.

Sunday, September 9: Festive Assembly and Banquet, Monday morning: departure for Basle.

Monday, September 10: conducted tours through the Swiss Museum for the History of Pharmacy, visit of pharmaceutical factories in groups, official lunch.

The invitations with the definitive program and details about accommodation in Berne and Basle shall be distributed in spring. Registration of scientific lectures concerning History of Pharmacy

and related disciplines (of not over 20 minutes length) should be addressed as early as possible to the President of the International Association for the History of Pharmacy: Apotheker G. E. Dann c/o Pharmaziegeschichtliche Bibliothek, Dänische Strasse 19, Kiel, German Federal Republic.

**Pharmacy Administration Seminar.** The program and speakers for the Eighth Annual Teachers' Seminar sponsored by the American Association of Colleges of Pharmacy and supported by the American Foundation for Pharmaceutical Education, this year devoted to the subject of Pharmacy Administration, and being held Sunday, July 22, through Friday, July 27, at The University of Texas College of Pharmacy, has been released.

The faculty for the Seminar is drawn from nineteen states and the District of Columbia, and is composed of outstanding faculty members of accredited colleges of pharmacy and of the University of Texas, lawyers, and executives from drug industry who are particularly interested in this area of instruction, which concerns itself primarily with business and legal aspects of pharmacy operation.

The program is devoted to four major areas of instruction and graduate training. The four major areas are accounting, marketing, management, and jurisprudence; one area is scheduled daily, with an open session in the morning followed by three workshops in the afternoon devoted to objectives and curriculum construction, methods of teaching and examining, and in-service activities; the study of graduate instruction is concerned with general requirements for graduate programs, educational resources, problems of graduate program development, faculty and personnel requirements.

The Seminar Committee is composed of Dr. Henry M. Burlage, Chairman, The University of Texas College of Pharmacy; Dr. R. A. Deno, University of Michigan College of Pharmacy; Dr. Louis C. Zopf, State University of Iowa, College of Pharmacy; Dr. Stephen Wilson, Wayne University College of Pharmacy; Mrs. Esther J. W. Hall, The University of Texas College of Pharmacy; Ex-Officio, Dr. A. Hamilton Chute, College of Business Administration, The University of Texas; and J. H. Arnette, Division of Extension, College of Pharmacy, The University of Texas.

#### **Eighth Annual Teachers' Seminar Pharmacy Administration**

**Sunday, July 22.** Registration, Informal Dinner, and Opening of Seminar.  
"The Door Is Open," H. M. Burlage, The University of Texas.  
"Keeping Education Up-To-Date," L. D. Haskew, The University of Texas.

"Fact and Fantasy," W. Paul Briggs, American Foundation for Pharmaceutical Education.

"Shadows, Highlights and Echoes," H. G. Hewitt, University of Connecticut.

**Monday, July 23.** Presiding, H. G. Hewitt, University of Connecticut.

*Morning*

"Horizons of Pharmacy Administration—Past and Future," Stephen Wilson, Wayne University.

"Have We a Sense of Direction?" A. H. Chute, The University of Texas.

"The Role of Accounting in Pharmacy Management," J. G. Ashburne, The University of Texas.

"Assets and Liability Values in Pharmacy Accounting," J. D. McEvilla, University of Pittsburgh.

"Expenses, and Planning and Control Phases in Pharmacy Accounting," J. H. Goodness, Massachusetts College of Pharmacy.

*Afternoon*

Workshops—Accounting.

Section 1. "Objectives and Curriculum Construction," Presiding, J. G. Ashburne, The University of Texas.

Section 2. "Methods of Teaching and Examining," Presiding, J. H. Goodness, Massachusetts College of Pharmacy.

Section 3. "In-Service Activities," Presiding, J. D. McEvilla, University of Pittsburgh.

**Tuesday, July 24.** Presiding, A. H. Chute, The University of Texas.

*Morning*

"The Challenge of Drug Marketing," P. C. Olsen, Philadelphia College of Pharmacy and Science.

"Satisfied Customers in Drug Marketing," T. T. Dittrich, Toller Drug Company.

"Professional Standards in Drug Marketing," R. E. Abrams, American College of Apothecaries.

"The Manufacturers' Stake in Drug Marketing," B. A. Smith, Eli Lilly and Company.

*Afternoon*

Workshops—Marketing.

Section 1. "Merchandising Policies and Problems," Presiding, J. H. Goodness, Massachusetts College of Pharmacy.

Section 2. "Promotion and Services," Presiding, T. T. Dittrich, Toller Drug Company.

Section 3. "Public Relations," Presiding, R. E. Abrams, American College of Apothecaries.

**Wednesday, July 25.** Presiding, Mrs. Esther J. W. Hall, The University of Texas.

*Morning*

"Problems and Opportunities in Organization," C. C. Rabe, American Pharmaceutical Association.

"Financial Management Through Credit," R. V. Evanson, Purdue University.

"Risk Management Through Insurance," W. W. Lew, The Walgreen Company.

"Personnel—Asset or Liability," J. K. Bailey, The University of Texas.

*Afternoon*

Workshops—Management.

Section 1. "Objectives and Curriculum Construction," Presiding, C. C. Rabe, American Pharmaceutical Association.

Section 2. "Methods of Teaching and Examining," Presiding, J. K. Bailey, The University of Texas.

Section 3. "In-Service Training," Presiding, R. V. Evanson, Purdue University.

**Thursday, July 26.** Presiding, Stephen Wilson, Wayne University.

*Morning*

"Basic Legal Values for the Pharmacist," E. W. Nelson, The University of Texas.

"Curriculum Development in Pharmacy Jurisprudence," I. W. Meyers, Drake University.

"Government—Your Unseen Partner," F. A. Duckworth, Columbia University and Charles Pfizer and Company.

"Extra-Legal Regulation by Competition," C. G. Frailey, George Washington University and Temple University.

*Afternoon*

Workshops—Jurisprudence.

Section 1. "Objectives and Curriculum Construction," Presiding, F. A. Duckworth, Columbia University, Charles Pfizer and Company.

Section 2. "Methods of Teaching and Examining," Presiding, I. W. Meyers, Drake University.

Section 3. "In-Service Training," Presiding, W. S. Apple, University of Wisconsin.

**Friday, July 27.** Presiding, L. C. Zopf, State University of Iowa.

*Morning*

"General Requirements for Graduate Programs," A. H. Chute, The University of Texas.

"Educational Resources and Their Classification," F. A. Grolle, University of Michigan.

Panel, "Problems of Graduate Development."

Moderator, L. C. Zopf, State University of Iowa.

Panel Members: S. Wilson, Wayne University.

W. S. Apple, University of Wisconsin.

R. V. Evanson, Purdue University.

*Afternoon*

"Objectives and Graduate Curriculum Requirements," R. V. Evanson, Purdue University.

"Faculty and Personnel Requirements," W. S. Apple, University of Wisconsin.

"General Summary of Seminar," R. E. Abrams, American College of Apothecaries, Chairman.

**Summer issue deadline.** All news items and announcements must be in the Editor's office by July 1.

## MEMORIALS

### ELDIN VERNE LYNN

Eldin V. Lynn, professor of chemistry of the Massachusetts College of Pharmacy, died at his home in Wellesley Hills, Massachusetts, on December 31, 1955. In his passing our Association has lost a brilliant worker who has been active in its affairs for more than two decades. During these years he has been prominent in the meetings of the Association, participating vigorously in the discussions and serving on numerous committees. For several years he was chairman of the Committee on Research.

Although Eldin Lynn was born in Iowa, his early education was received in Washington. He earned his Bachelor of Arts degree at the University of Washington. He then went to the University of Wisconsin for graduate study, earning his Doctor of Philosophy degree in the fields of chemistry and pharmacology. After serving as instructor at the University of Wisconsin, at the University of Illinois, and at the Oklahoma Agricultural and Mechanical College, he became a research worker with Parke, Davis and Company. In 1920 he returned to the University of Washington to become professor of chemistry and pharmacology, a position that he held until 1934 when he became associated with the Massachusetts College of Pharmacy.

He was author of more than one hundred scientific publications, including two textbooks. Among his major projects of the past fifteen years was the preparation of a bibliographic list of all reported investigations on plants and natural products of plants from 1560 to 1954, inclusive. This has already proved very valuable to researchers in this area of study.

Educator, author, chemist, and traveler, Eldin Lynn was known throughout the world, and as recently as last August he completed a three-months' sea trip, visiting with fellow scientists at several foreign ports. The scores of graduate students whose work he supervised and his many friends in our Association mourn the loss of one on whom they had come to depend for information, inspiration, and companionship whenever they met with him. The memory of Eldin Lynn will be longlasting. Our Association will not forget his great service in furthering its objectives, the promotion

of pharmaceutical education and research. He was, above all, an educator. (Howard C. Newton)

### **SALVATORE SANTELLI**

The faculty of the Brooklyn College of Pharmacy, Long Island University, lost a promising colleague in the premature death of Professor Salvatore Santelli, who passed away December 21, 1955, at the age of 34, after several months of illness.

Professor Santelli was born in Brooklyn, New York, on December 11, 1921, and obtained his early education in the borough schools. He was graduated from the Brooklyn College of Pharmacy, L.I.U., in 1943 and obtained his M.A. at New York University in 1949. At the time of his passing he was completing his doctorate degree at N.Y.U.

He joined the Brooklyn College of Pharmacy in 1945 and for the past nine years was a member of the pharmacy department.

He was president of the Holy Name Society, and a member of the American Chemical Society, American College of Apothecaries, N.Y. Academy of Science, Kings County Pharmaceutical Society, The Italian Pharmaceutical Society, and the Rho Chi Society.

Professor Santelli is survived by his mother, father, sister, and two brothers.

His students will remember him with affection for his thoroughness in teaching and his thoughtfulness and consideration of student problems. (Berl S. Alstott)

### **BERT RAY MULL**

Bert Ray Mull, professor of pharmacy administration at Butler University, Indianapolis, died of a heart ailment in his home at Monticello, Indiana, Tuesday, January 31.

Dr. Mull was born near Belmore, Ohio, in 1890. He received his early education in the public schools and his college work at Ohio Northern University, graduating from the College of Pharmacy there in 1912. He was later awarded an honorary Doctor of Pharmacy Administration degree by the same University. He was a registered pharmacist in Ohio, Indiana, and South Carolina.

Dr. Mull joined Eli Lilly and Company in 1926 as a Medical Service Representative. Prior to this time and for a number of years he had successfully practiced pharmacy in his own establishment in Continental, Ohio. He was called to the home office of Eli Lilly and Company at Indianapolis in 1928 and became director of the firm's trade and professional relations. He was editor of

*Tile and Till* and was closely identified with the *Lilly Digest*. In 1953, he was appointed Director of Special Assignments and Assistant to the Vice-President of the company.

Dr. Mull's activities were many and varied. He was for a long time the lay president of the Bethlehem Lutheran Church. He belonged to several Masonic Lodges and was for many years an active member of bands both in Columbus, Ohio, and in Indianapolis. He was also a member of Boys' Club. In earlier years, he was a writer of short stories and contributed to *Boys' Life*.

In the course of his regular duties, he found time to make many contributions to pharmacy for which he will be well remembered. He was Past-Chairman of the House of Delegates and a life member of the American Pharmaceutical Association. He was an effective participant and chairman of a number of the organization's committees. He was active in the affairs of the NARD and the National Wholesale Druggists' Association and was a life member of the Indiana Pharmaceutical Association. He was also a member of Rho Chi and the Indiana Academy of Science.

It is in the field of teaching that the pharmacy faculty at Butler University came to know him best. Dr. Mull loved to teach. To his students in the classrooms, he brought a wealth of information gained from his vast experience and did it kindly, effectively, and dynamically. He was a most highly respected and inspiring teacher.

Those of us who were privileged to work with Dr. Mull feel a great personal loss at his death, and we express to Mrs. Mull and the family our sincerest sympathy. (A. A. Harwood, N. L. Michener, E. J. Rowe, Chairman)

---

## NEW LITTLE PEOPLE

**Dennis Keith Gallop**—born August 28, 1955—grandson of Dean W. D. Strother, Southwestern College of Pharmacy.

**Ellyn Meyers**—born March 17, 1956, to Dr. and Mrs. Donald B. Meyers, Butler University.

**Judd Bradford Wenzel**—born March 19, 1956, to Dr. and Mrs. Duane G. Wenzel, University of Kansas.

**David Edward Blockstein**—born January 1, 1956, to Mr. and Mrs. William L. Blockstein, University of Pittsburgh.

**Siri Linn Granberg**—born February 26, 1956, to Dr. and Mrs. C. Boyd Granberg, Drake University.

**Martha Sue Mattocks**—born March 13, 1956, to Dr. and Mrs. Albert M. Mattocks, University of Michigan.

**Kathleen Marie Keane**—born February 8, 1956, as the second daughter of Dr. and Mrs. John F. Keane, St. Louis College of Pharmacy and Allied Sciences.

**Steven Brandon Clark**—born January 26, 1956, to the son of Dean Ralph W. Clark, University of Oklahoma.

Dr. Milton L. Neuroth, Medical College of Virginia, is the proud grandfather of a nine-pound baby girl.

*The successful druggist knows that he never stops learning, and all any college can do is to point the way.*

Richard A. Deno, Am. J. Pharm. Ed., 4, 620 (1940)

## MARRIAGES

Dr. A. J. Vazakas, assistant professor of chemistry, Temple University, to Miss Lillian Mariano, January 28, 1956.

*Pharmaceutical dignity based upon sound knowledge and a proper sense of public health obligations and responsibility for professional contacts—these are some of the things that must get a hold upon pharmacists if pharmacy is to enjoy that degree of dignity that this age old service to mankind has a right to expect for itself.*

Wortley F. Rudd, Am. J. Pharm. Ed., 4, 275 (1940)

## STAFF CHANGES

### NEW STAFF MEMBERS

**Southern College of Pharmacy.** Professor L. N. Dressel has been added as part-time instructor in accounting. Mr. Dressel also teaches at Georgia State College of Business Administration in Atlanta.

**Howard University.** Dr. Theodore Zalucky.

**University of Tennessee.** Dr. James G. Young has been appointed assistant professor of pharmacy and chemistry.

**University of Florida.** Dr. Leroy D. Beltz has been appointed assistant professor of pharmacy effective February 1, 1956. He is from the University of Connecticut.

**University of Connecticut.** Harold M. Beal of the University of Florida has been appointed assistant professor of pharmacy effective September, 1956.

**Southwestern State College of Pharmacy.** Dr. Martin Hamner was employed as associate professor of pharmacy, September 1, 1955. He replaces Professor Laurence McArthur who resigned to go into retail business in San Diego, California.

**Medical College of South Carolina.** Mr. Dale H. Cronk was appointed assistant professor of pharmacy.

**Ohio State University.** Dr. Lloyd M. Parks will become dean of the College of Pharmacy effective July 1, 1956. He will succeed Dr. Lloyd E. Harris who has been acting dean for the period July 1, 1955, to July 1, 1956.

**University of Southern California.** Dean R. McCann has been appointed lecturer in pharmaceutical law.

**Medical College of Virginia.** Dr. Walter H. Hartung and Dr. John Andrako, both formerly of the University of North Carolina School of Pharmacy, will join the M.C.V. School of Pharmacy faculty this fall.

**Wayne University.** Dr. August G. Dante, assistant professor of pharmacy.

**University of Nebraska.** Dr. Tom S. Miya will become associate professor of pharmacology and chairman of the department effective September 1, 1956. He will succeed Dr. Harald G. O. Holck, who will retire after twenty years of service.

### **CHANGES IN STAFF TITLES**

**University of Houston.** Miss Martha J. Jones, department of pharmacognosy, has been promoted from instructor to assistant professor.

**St. Louis College of Pharmacy and Allied Sciences.** James Robert McCowan has been promoted from assistant professor of pharmacy to associate professor. James Duffy has been appointed lecturer in English. Robert J. Bequette and Byron M. Gallant were appointed assistant instructors in pharmacy.

**Idaho State College.** Dr. Laurence E. Gale has been appointed acting dean of the College of Pharmacy effective February 1, 1956.

---

*Deans may not only become a menace to pharmacy,—they may even become a menace to life, health, and morality.*

Rufus A. Lyman, Am. J. Pharm. Ed., 3, 574 (1939)

## GENERAL NEWS

**Smithsonian pharmacy exhibit.** The Smithsonian Institution's Division of Medicine and Public Health has announced the opening of a new exhibit which pictorially traces the development of the drugstore. Sponsored by the American Institute of the History of Pharmacy, the exhibit features twelve hand-colored pictures commencing with an Islamic pharmacy of the 13th century and concluding with a modern American pharmacy. The original pictures, from which these reproductions were made, are all contemporary to the times portrayed.

The first privately owned, governmentally supervised shops dealing mainly in drugs were in Bagdad about the middle of the 8th century. Pharmacies sprang up in Europe following the Islamic pattern, particularly after the 12th century. The pictures show that the pharmacies, like other medieval shops, were open to the street, and a large shutter that closed off the shop at night served as a counter when open during the day.

The Smithsonian exhibit shows how the pharmacy became larger and more sheltered from the street by the 16th century, while equipment grew more elaborate and drug containers more uniform in size and shape. The earliest interior view of a drugstore known to have survived in the United States has plain glassware and fixtures as compared with its European counterpart. Dr. George Urdang, pharmaceutical historian and director of the American Institute of the History of Pharmacy, notes that "if there is any unique institution in the United States of America, which in its entirety has been the very specific product of the very specific way in which the country has been settled and has been developed, then it is the American drugstore."

Others who cooperated in the preparation of this pictorial exhibit are Dr. Glenn Sonnedecker, secretary of the pharmaceutical historical society, and George Griffenhagen, associate curator of the Smithsonian's Division of Medicine and Public Health. The exhibit is located in the Arts and Industries Building, 9th and Jefferson Drive, Washington, D.C.

**Hughes retires at Eli Lilly and Company.** Dr. Edward J. Hughes, manager of Eli Lilly and Company's analytical department for the last twenty-five years, retired February 29.

A native of Pennsylvania, Dr. Hughes was graduated from the Philadelphia College of Pharmacy and Science in 1916 with the degree of Doctor in Pharmacy. In 1938 he was awarded an honorary Master of Pharmacy degree by the Philadelphia College of Pharmacy and Science.

Dr. Hughes returned in 1919 to the Philadelphia College of Pharmacy and Science as an instructor and, later, assistant professor of chemistry. During his eight years on the faculty, he was associated with or taught many men who are now members of the Lilly organization.

Dr. Hughes joined Lilly in 1927 as assistant to the production superintendent and was transferred two months later to the formula control department as a pharmaceutical chemist. He has held his present post in analytical since 1930.

Dr. Hughes has been a member of the editorial staff of Remington's *Practice of Pharmacy* during the last four editions and has been associated with many revisions of the U.S. Pharmacopeia. In work on analytical problems common to the pharmaceutical industry, he has collaborated with Food and Drug Administration, the U.S.P. Pharmacopeial Committee of Revision, the National Formulary Committee of Revision, and many other technical groups.

**Veterans Administration hospital residency program.** June, 1956, will mark the completion of a two-year combined academic and professional residency in hospital pharmacy for three pharmacists at the Veterans Administration Center in Los Angeles, California.

They are candidates for the degree of Master of Science in Pharmacy (Hospital) at the University of Southern California, and will be awarded certificates for the satisfactory completion of the residency in hospital pharmacy by VA.

The pharmacy residency at Los Angeles is the pilot program that resulted in the development of similar programs in VA hospitals at Buffalo, N.Y.; Houston, Texas; Iowa City, Iowa, and St. Louis, Missouri.

The resident works 28 hours a week during the two-year residency. This time includes at least 580 hours in hospital pharmacy administration; 720 hours in sterile and non-sterile bulk compounding; 580 hours in general dispensing; 420 hours in outpatient dispensing, and 150 hours of lectures, classes and conferences. Two hundred hours on special assignments also are provided.

Attention is given to development, improvement, and assay of useful and stable medicinal compounds. The residents consult with the medical staffs and nurses on uses, contraindications, incompatibilities, and other matters pertaining to new drugs. They attend professional society meetings, seminars, and institutes, and give lectures to nurses and medical residents at the hospital.

Applicants for residency are selected from a nation-wide Civil Service register. Each applicant must be a citizen of the United States; a graduate of an approved College or School of Pharmacy with the minimum of Bachelor of Science degree; licensed and currently registered in at least one state, and acceptable for admission to the graduate school of the cooperating universities.

The residents receive \$2.18 per hour for a 28-hour workweek. From this is deducted a nominal fee for board and room. Lodging in Los Angeles is provided in the medical intern quarters, and meals are provided at the hospital staff dining room. Uniforms and linen are supplied. Residents are required to pay all tuitions and fees at the university. Sick and vacation leaves are earned. The residents participate in the Civil Service pension plan. Emergency medical treatment and hospitalization are available.

**Hilby promoted at Eli Lilly and Company.** Wayne W. Hilby, who has been in analytical work with Eli Lilly and Company for twenty years, has been named manager of the analytical department to succeed Edward J. Hughes, who retired recently. His Bachelor of Science de-

gree in pharmacy was conferred by Ohio State University in 1936, and he joined Lilly that year.

**Fund for the Advancement of Education Grants.** Clarence H. Faust, president of the Fund for the Advancement of Education, announced April 14, that the Fund has made grants totaling \$501,615 to thirty-four institutions of higher learning in the United States to support planning and experimental programs designed to effect better utilization of their teaching resources. The awards are being made on the recommendation of the Committee on Utilization of College Teaching Resources under the chairmanship of Chancellor Henry T. Heald of New York University. The institutions receiving awards under the program are listed as follows: Antioch College, Case Institute of Technology, University of Colorado, University of Connecticut, Duke University, Fordham College, Grinnell College, Harvard University, Howard University, State University of Iowa, Johns Hopkins University, University of Kentucky, Lehigh University, Los Angeles State College, Marquette University, University of Michigan, Montana State College, University of Nebraska, University of New Mexico, Ohio University, University of Omaha, University of Oregon, Philander Smith College, University of Pittsburgh, Pomona College, Purdue University, Rensselaer Polytechnic Institute, Smith College, Stanford University, Sweet Briar College, Wabash College, State College of Washington, Wellesley College, and Williams College.

Dr. Faust said, "The problems of recruiting more able people for college and university teaching, providing them with adequate preparation for their work, and utilizing their competence more effectively, are the most challenging ones facing higher education for the next ten or fifteen years. If we are to avoid a grave decline in the quality of higher education, new and imaginative ways must be found to organize and deploy our possible teaching resources so as to maintain and even improve the quality of education for a much larger number of students in American colleges and universities."

The widespread concern in colleges and universities with this question of better utilization of teaching resources is reflected in the total of 1,070 applications received from 542 institutions under the Fund's recently announced program.

The grants recommended by the Committee are of two types: grants of \$10,000 or less for support of programs of institutions *planning* preparatory to experimentation; and grants for amounts up to \$25,000 for programs of *planning combined with experimentation*.

Projects receiving support represent a wide range of approaches to the problem of providing a high quality of education for more students without a corresponding increase in the number of professionally educated full-time faculty members. They include plans for use of audio-visual aids, particularly television, films, and tape recordings for classroom instruction or laboratory work; study and experimentation to determine optimum class size for effective teaching in different subjects and with varying methods of instruction; the use of non-professional assistants for various non-teaching duties; an evaluation of the use of part-time teachers in undergraduate education; use of new testing devices and methods to reduce the routine work of instruction; revision of the curriculum to avoid overlapping and unnecessary courses; and greater reliance on independent work by students.

## COLLEGE NEWS

**Howard College.** The Howard College Pharmacy Alumni Foundation has received its certificate of incorporation. The foundation's purpose is to promote the growth, progress, and general welfare and to foster and promote pharmaceutical research at the Division of Pharmacy, Howard College, Birmingham, Alabama.

The first issue of the *Howard College of Pharmacy Alumni Journal* was published during the fall semester under the editorship of Director W. R. Byrum with the cooperation of the faculty, officers of the student organizations, and the pharmacy alumni association officers.

The annual Pharmacy Seminar, sponsored jointly by the Alabama Pharmaceutical Association and Howard College Division of Pharmacy, was well attended. Morning and afternoon sessions offered panel discussions on pharmacy problems and talks by prominent local physicians and pharmacists.

The Alabama Pharmaceutical Association has extended honorary membership cards to the pharmacy graduating class.

An alumnus, Mrs. Lillie Mazzara Baldone, won the third prize in the national pharmacy week professional window display contest. The window won out in the state competition. (John E. Wintter)

**University of Arizona.** A travel-hearty group of students left Tucson on March 30, by Greyhound Scenicruiser for the biennial tour of mid-western pharmaceutical manufacturing plants. Dean and Mrs. W. R. Brewer and several medical representatives chaperoned the group. Visits to Eli Lilly and Company, the Upjohn Company, and Abbott Laboratories are scheduled during the ten-day trip.

Faculty and students alike made many new friends for pharmacy in the community during the thirteen television programs presented biweekly in Tucson and sponsored by the Tucson Pharmaceutical Association. Dean Brewer was the chief coordinator for the series.

A half-hour educational program, "Cross Section—University of Arizona," is presented weekly both in Tucson and Phoenix by television. Drs. V. H. Simonian and J. A. Zapotocky participated in two discussion-demonstration programs in this series which dealt with the scope of pharmacy, opportunities in pharmacy, and the sources of our modern drugs.

At a recent meeting of the Cattlemen's Association, Lloyd Burton, instructor in first aid and public health, addressed the group and discussed "Emergency Service in the Community."

Dr. Albert Picchioni addressed a group of agricultural biochemists on the topic, "Morphine Antagonism." The twenty-minute color movie which he prepared on the same topic was also presented.

Dr. V. H. Simonian gave an illustrated talk on "Hospital Pharmacy in the Middle East" at the March meeting of the Arizona Society of Hospital Pharmacists. (Joseph A. Zapotocky)

**University of Southern California.** A Senior Awards Banquet to be held May 17 will be the concluding event of the fiftieth year of the S.C. School of Pharmacy. In retrospect, the Golden Anniversary events have been most successful, with the Fund Drive of the Alumni Development Program reaching its goal of \$107,000 in pledges, some twenty-one seminars given or in progress, and nearly 700 alumni in attendance at the annual Alumni Banquet. Two \$1,000 research grants from the Alumni Development Program have been awarded to Dr. John A. Biles and Dr. Carman A. Bliss for summer work. Rose Walton Byram, secretary of the school for the past ten years, has resigned her post to become a homemaker.

Dean R. McCann has been appointed lecturer in pharmaceutical law. He has a B.S. in pharmacy from S.C., an LL.B. from Hastings, and postgraduate work at Columbia University. (Edward S. Brady)

**University of Colorado.** Students and members of the pharmacy faculty attended and participated in the discussions at the fifth annual meeting of the Rocky Mountain Drug Conference held in Denver, Colorado, on March 24-25. The boards of pharmacy, the state pharmaceutical associations, colleges of pharmacy, students, and retailers from six states of the Rocky Mountain area were represented.

Dean Charles F. Poe was granted an academic leave and completed some special work in public health at the University of Minnesota during the winter quarter. During his absence, Dr. Fred Drommond served as Acting Dean.

Members of Theta Chapter of Kappa Epsilon, national pharmaceutical sorority for women, have been participating in the high school visitations sponsored each spring by the Office of Admissions. At least one member of Kappa Epsilon accompanies the group on the visitation, and presents the university from the student's viewpoint as well as pointing out the advantages of a professional career in pharmacy.

Sigma Chapter of Phi Delta Chi, national professional pharmacy fraternity, held initiation ceremonies on February 25, for sixteen new members. Honorary membership was extended to Bert C. Corgan, President, and C. Carroll Gilbert, Secretary, of the Colorado State Board of Pharmacy. Mr. Corgan is also a member of the Executive Committee of the NARD, and has made appearances on national television programs for the promotion of the pharmacy profession.

In observance of Religion in Life Week on the campus, the divisions of chemistry, pharmacy, and nursing sponsored a convocation at which Dr. Vincent Smith was the guest speaker. Dr. Smith is professor of philosophy and physics at the University of Notre Dame and well known for his many contributions to the fields of philosophy and science.

Dr. Takeo Ishiguro, professor of pharmacy at the University of Kyoto, Japan, visited the College of Pharmacy and spent the day visiting with members of the faculty and observing activities in the laboratories and classrooms. Dr. Ishiguro is a distinguished scientist and is making an extended tour of various universities in the United States.

Recent guest speakers on the campus of interest to pharmacy students have been Dr. William MacNevin, professor and chairman of the division of analytical chemistry, Ohio State University, who lectured on the subject, "A Study of Chemistry Prior to the Appearance of Biological Life on Earth"; and Dr. Wendell Stanley, Head of the Department of Biochemistry and Director of the Virus Laboratory at the University of

California in Berkeley who spoke on "Recent Chemical Studies on Polio and Tobacco Mosaic Viruses." (Fred G. Drommond)

**University of Connecticut.** The School of Pharmacy has on display a very old bell bronze mortar which was donated by two Connecticut pharmacists. It weighs 170 lbs. and was cast by Eberhard Splinter in Enkuisen, Holland, in the year 1636.

The Foreign Economic Administration is presenting the School with a quantity of cinchona bark for physical and chemical examination to complement the work being carried on at the National Arboretum.

Faculty members attended the Annual Meeting of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy, District No. 1 (New England) in Hartford in March. W. R. Williams was Chairman of the Program Committee and Dean H. G. Hewitt, N. W. Fenney and A. E. Schwarting took part in the program.

The Kappa Psi Fraternity held its 28th National Grand Council Convention and Diamond Anniversary in December in Chicago. Professor N. W. Fenney, former Grand Regent, was appointed Editor of the Mask and Professor W. R. Williams was reelected Grand Historian for a second term.

A testimonial dinner in honor of Dean Harold G. Hewitt on the occasion of his election to the office of president of the American Association of Colleges of Pharmacy was held May 12, at the Hotel Bond in Hartford. The affair was sponsored by the Connecticut Pharmaceutical Association, the Travelling Men's Auxiliary, Lambda Kappa Sigma Sorority and its graduate chapter, and the following pharmaceutical fraternities and their graduate chapters: Alpha Zeta Omega, Kappa Psi, Phi Delta Chi, and Rho Pi Phi.

Alpha Gamma Chapter of the Rho Chi National Honor Society added eight new members at its annual initiation banquet held at the Nathan Hale Hotel, Willimantic, in March. The guest dinner speaker was Roland Smith of the UConn School of Business Administration.

The tenth annual Postgraduate Pharmacy Clinic, sponsored by the University of Connecticut School of Pharmacy and the Connecticut Pharmaceutical Association, was held at the school of pharmacy May 2. Authorities in the various phases of pharmacy served as lecturers. UConn President, Albert N. Jorgensen, addressed the participants at luncheon as did Provost Albert E. Waugh at dinner.

Dean Harold G. Hewitt attended the Annual Meeting of the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy, District No. 4, in Toledo, Ohio, in March. He also took part in the annual convention in Detroit in April. (Augustus A. Maier)

**Howard University.** Members of the junior and senior classes visited the Eli Lilly Company, Indianapolis, Indiana, March 7, 8, and 9, 1956.

Dr. Theodore Zalucky, Doctor of Natural Sciences, 1945, University of Vienna, Austria, has been appointed to the staff. (Roy C. Darlington)

**University of Florida.** Dr. Stewart W. Freyburger, instructor in physiology, 36, died in a diving accident, March 18.

The College of Pharmacy Open House was held by the Mortar and Pestle Student Branch of the American Pharmaceutical Association in

conjunction with the Engineering Fair, March 9-11. The eighteen tables of exhibits and demonstrations were visited by several thousand people.

The fifth president of the University, Dr. J. Wayne Reitz, was formally inaugurated on February 18.

Dr. C. H. Becker spoke on "Dental Prescriptions" to a group of sixty-five dentists at Orlando on March 6.

At the January commencement, the degree of Doctor of Philosophy was awarded to Stewart W. Freyburger and to Charles W. Hartman, of the staff of the University of Georgia. (Carl H. Johnson)

**Southern College of Pharmacy.** In cooperation with the Georgia Pharmaceutical Association, a two-page professional relations questionnaire was prepared and mailed to the physicians and pharmacists of Georgia during January. Its purpose was the friendly exposure of activities in each profession which the other found inadequate or objectionable. The response from both professions has been excellent; 47 per cent of the physicians and 28 per cent of the pharmacists replied. After tabulation a complete report of the project will be made to the Georgia Pharmaceutical Association and to the Medical Association of Georgia. Both professions put considerable thought into their comments, and quite a few good suggestions have been received which should be of interest outside the state also.

Dr. Oliver M. Littlejohn has delivered an illustrated lecture on drugstore equipment and sanitation at three district meetings of the Georgia Pharmaceutical Association. He spoke to the ninth district in Canton on February 9, to the tenth district in Athens on February 29, and to the seventh district in Rome on March 7. Dean Melvin A. Chambers and other members of the faculty also attended meetings of the sixth district in Macon and the fifth district in Atlanta.

The organization of S.C.P. student wives has been reactivated with the assistance of Dr. Minnie M. Meyer. The first project of the organization was a bingo party on March 9. (Douglas Johnson)

**University of Georgia.** Professors S. D. Feurt and W. F. Dodds have conducted a very successful postgraduate course in pharmacology for nurses from various county associations. Forty nurses received certificates for completion of the ten-week course on March 16.

Crawford W. Long Day exercises were held on March 30, in the General Library Auditorium. Dr. Carl Pfeiffer, head of the department of pharmacology, Emory University School of Medicine, was the guest speaker. The celebration, commemorating the 114th anniversary of the discovery of ether for anesthesia by the distinguished pharmacist-physician, was climaxed by a ceremony in which Rho Chi, national honorary society, and Crawford W. Long Medical Society placed a wreath on the Long marker in front of the School of Pharmacy. Rho Chi and the Committee on Special Lecture and Convocations sponsor Crawford W. Long Day each year.

Professor Charles W. Hartman received the Ph.D. degree from the University of Florida College of Pharmacy on January 28.

A group of senior students were the guests of Lederle Laboratories during the spring holidays. Pharmacy students were accompanied to Lederle by a group of veterinary medicine seniors. (Charles W. Hartman)

**Idaho State College.** A group of thirty-two seniors are leaving March 28, to make a tour of the Eli Lilly and Company plant at Indianapolis, Indiana. Mrs. Cisco Kihara, executive secretary and instructor in pharmacy, is going to act as chaperone.

Mr. Max Polinsky, instructor in pharmacy, and Mrs. Polinsky are taking a trip by auto to Iowa and Wisconsin during the last week of March and the first week of April. (C. C. Riedesel)

**Butler University.** Dr. B. R. Mull, professor of pharmacy administration at Butler University, died of a heart attack on January 31, 1956.

The College of Pharmacy is holding its annual Seminar on Modern Pharmacy for pharmacists throughout the state of Indiana on May 8 and 9, 1956.

Dr. Edward J. Rowe has been appointed Director of the Central Indiana Regional Science Fair to be held April 28, at the College of Pharmacy. This project is a grass-roots movement to interest and encourage pupils in science. The Regional comprises eight counties and includes nearly three hundred schools. Grades seven through twelve exhibit their science projects and compete for awards. Co-sponsors of the Science Fair are the Indianapolis Retail Druggists Association, The Indiana Section of the American Chemical Society, The Indianapolis Medical Society, and Butler University.

Dean Kaufman was the guest speaker recently at a number of local drug meetings in the state. His subject was "The Future of Pharmaceutical Education." Butler University will be offering the five-year program on an optional basis beginning with the fall semester. The program offers two years of pre-pharmacy work and three years in the pharmacy college.

An "appreciation" dinner for Dean Emeritus Edward H. Niles was given by the Retail Druggists' Association on January 25. More than 250 persons were present.

Phi Delta Chi Fraternity held its forty-first grand council in Indianapolis. Dean Kaufman participated in the activities.

The Butler University Chapter of Phi Delta Chi was formally installed on January 26. Dr. C. G. Weigand, manager of the Medical Department of Eli Lilly and Company, spoke to the students on "The Complexities Involved in the Introduction of a New Drug."

The Indianapolis Branch of the American Pharmaceutical Association and the Indiana Chapter of the American Society of Hospital Pharmacists sponsored an all-day meeting on the Butler University campus recently. Dean Kaufman and Mr. Allen V. Beck participated in the program.

Three College of Pharmacy students were honored by being selected to the 1955-1956 edition of *Who's Who Among Students in American Universities and Colleges*.

Dr. Dorothy Hubbard, assistant professor of biochemistry and physiology, spoke at a meeting of the Indiana Section of the American Chemical Society, January 31. Her subject was "Bacterial Metabolism of Diamines."

Due to Dr. Mull's death, the courses in pharmacy administration are now being taught by Mr. J. W. Lansdowne and Mr. Benjamin Smith, both of Eli Lilly and Company.

Wives of Butler University pharmacy students and faculty members met recently to organize a new club in which membership will be

granted to wives of students and faculty of the College of Pharmacy, and to those closely associated with the College of Pharmacy.

Dr. John W. Martin and Dean K. L. Kaufman are participating in the work of the Manpower Committee of the American Chemical Society Indiana Section, through a cooperative arrangement between that society and the American Pharmaceutical Association, Indianapolis Branch. The group proposes to interest more capable high school students in the sciences, pure and applied.

Dean Kaufman and Dr. E. J. Rowe attended the annual District Four meeting at Toledo, Ohio, March 10-12. Dr. Rowe was re-elected secretary-treasurer for the group. (Edward J. Rowe)

**Purdue University.** On February 29, 1956, the Eta Chapter of Rho Chi Society, University of Wisconsin, presented the sixth annual Edward Kremers Memorial Lecture. The lecturer chosen this year was Dr. John E. Christian, professor of pharmaceutical chemistry and coordinator of bio-nucleonics research. The lecture was one of the all-University lecture series and open to students and faculty as well as to the general public. Dr. Christian spoke on the general subject of the use of radioactive isotopes in pharmacy and medicine. The following day, Dr. Christian spoke to the pharmacists in the Milwaukee area.

John F. Martin, a senior at Purdue University from St. Anne, Illinois, has been selected as the recipient of a graduate scholarship sponsored by seventy-five Rotary clubs of northern Illinois for study abroad during the 1956-1957 school year. Martin expects to take a year of graduate study at the University of Sydney in Australia, majoring in industrial pharmacy. He will participate in a scholarship fund accumulated over the past sixteen years, and through which the Rotarians of northern Illinois now provide two scholarships annually, one for a resident of that area to study abroad, and another for a student from another country to study here.

Dr. Takeo Ishiguro, professor of pharmacy at the University of Kyoto, Kyoto, Japan, was a visitor at the School of Pharmacy February 29, and March 1. Professor Ishiguro is a noted scientist who has made many contributions in the field of natural products and especially synthetic medicinal products.

The District IV meeting of boards and colleges of pharmacy was held in Toledo, Ohio, March 11-13. All state boards and colleges of pharmacy in Wisconsin, Michigan, Illinois, Indiana, Ohio, and Kentucky were represented. Dr. A. N. Martin, Dr. G. J. Sperandio, and Dean Glenn L. Jenkins attended from Purdue. Dr. Martin appeared on the program giving a paper entitled "Pharmaceutical Education at the Crossroads."

Dr. C. Jelleff Carr attended the conference on Experimental Methods for Evaluation of Drugs in Various Disease States held by the New York Academy of Sciences Section of Biology March 8 and 9, in New York City.

Sigma Delta Chi, national journalistic fraternity, chose three members of the *Purdue Pharmacist* staff for inclusion in their 1956 Pledge class. These included Glenn Knotts, associate editor, William Cowell, and Jim Southall, advertising manager and associate advertising manager, respectively.

Dr. Lloyd M. Parks, professor of pharmaceutical chemistry at the University of Wisconsin, and Purdue graduate B.S. 1933, M.S. 1936, and

Ph.D. 1938 from Wisconsin, has been appointed Dean of the School of Pharmacy at the Ohio State University. Dr. Parks is National Secretary of the Rho Chi Society, national pharmaceutical honorary. (Gustav E. Cwalina)

**Drake University.** Two Drake College of Pharmacy senior students were among twenty-three seniors and second semester juniors elected to represent Drake in the national listing of *Who's Who in American Colleges and Universities*. The College of Pharmacy students are George Farmer, Rockford, Illinois, and Harold Rankin, Storm Lake, Iowa.

Dean and Mrs. Byrl E. Benton accompanied fifty-five junior and senior students on an industrial tour to Parke, Davis and Company, Detroit, Michigan, and the Upjohn Company, Kalamazoo, Michigan, the week of February 19. (Byrl E. Benton)

**University of Kansas.** Dean J. Allen Reese, who suffered a heart attack on January 14, is recovering well and is allowed by his physician to be back at his desk for short periods of time.

Dr. J. H. Burckhalter has been awarded a research grant from the Monsanto Chemical Company.

Dr. D. G. Wenzel took part in the Kansas Highway Patrol Training School at which he discussed the medical aspects of alcohol. Dr. Wenzel has received word of the renewal of a grant from the National Institute of Health for pharmacological studies of tetracovalent phosphorus compounds.

Dr. Takeo Ishiguro, professor of pharmacy at the University of Kyoto, Japan, recently spent a day visiting the school of pharmacy. (Raymond E. Hopponen)

**University of Maryland.** The University of Maryland is celebrating its Centennial and Sesquicentennial for eighteen months in 1956 and 1957. On March 3-6, a gigantic exhibit of the work of the fifteen schools of the university was held in the beautiful new Student Activities Building at College Park, Maryland. The building, the largest arena south of New York, offered a perfect setting for the huge display.

The School of Pharmacy had a large booth portraying the general theme of the exhibition, "Then and Now." Against a red, white, and blue color scheme pharmaceutical equipment of the present day was contrasted with that of a hundred years ago. Mr. George Griffenhagen, Associate Curator of the Division of Medicine and Public Health at the Smithsonian Institution, generously lent the School effective display cases and many valuable patent-office models of pharmaceutical equipment, in addition to old glassware and mementos from Maryland drugstores of a century ago. The Maryland Historical Society lent a set of rare Wedgwood weights, an old apothecaries' daybook, and other records. Mortars from the notable collection of Morris Cooper were on display. In two large flat cases were shown old catalogues, commencement programs, research bulletins, and pictures from the enviable collection of Mr. William Gould—mementos which brought forth reminiscences and nostalgic memories from many an old graduate. The first book used by the library was contrasted with the present-day pharmacy collection of 27,000 volumes of books. On display was the United States Pharmacopoeia of 1850 to which the early faculty had contributed much research. The original charter of the school from 1841, in graceful Spen-

cerian hand, was also shown. There was an effective contrast of the curriculum of 1851 and that of 1956. In another case were displayed drugs for 1841 still in common use. Many of these drugs in original containers (even aloes from Zanzibar in a monkey skin!) came from the vast *Materia Medica* collection of the Smithsonian. Contrasted with the old standbys were pharmacy's wonderful contributions to contemporary medicine. Eli Lilly lent a colorful display of the development of Vitamin B12. About the booth were statistics of which the University of Maryland School of Pharmacy can be proud; we have graduated 3147 pharmacists, giving Maryland 90 per cent of her pharmacists. The exhibit was directed and arranged by Dr. A. B. Ballman. Generous assistance in setting up the elaborate display was given by Mr. John J. Sciarra, instructor in pharmacy, Mrs. Daisy E. Gue, and Mr. Russell Carrington. Other members of the Centennial and Sesquicentennial Committee were Dr. Frank J. Slama and Dr. C. T. Ichniowski. (Adele B. Ballman)

**New England College of Pharmacy.** Dr. Herbert C. Raubenheimer, Dr. Clifford Coles, and Dr. O. James Inashima represented the New England College of Pharmacy at the recent meeting of District No. 1 AACP-NABP, held in Hartford, Connecticut. Dr. Herbert C. Raubenheimer acted as chairman of the Resolutions Committee and read the address of Dean Constantine N. Meriano who was not able to be present. The topic of this talk was "Recruitment of Students under the Five-Year Program."

The following members of the faculty will attend the meeting of the AACP and the A.Ph.A. in Detroit, Michigan, in April: Dean Constantine N. Meriano, Dr. Herbert C. Raubenheimer, Dr. Sigurdur Jonsson, Dr. Clifford Coles.

Over one hundred graduates and friends of the college attended the first Refresher Program sponsored by the college in the latter part of March. The Faculty Committee on Continuation Study consists of the following members: Dr. Herbert C. Raubenheimer, Chairman, Dr. Clifford Coles, Dr. Mitsuru J. Nakamura, Mr. Robert Paxinos, Dr. Norman Rosenberg. The course was given on Tuesday and Thursday evenings March 20, 22, 27, and 29. The following presentations were made: "Shall I Buy a Drug Store?" by Paul C. Olsen, associate editor of *Drug Topics*; "How Can a Better Relationship Between Manufacturer and Pharmacist be Developed?" by Robert E. Abrams, executive secretary of the American College of Apothecaries and assistant professor of practical pharmacy at Philadelphia College of Pharmacy and Science; "The New Look of the Research Agenda" by E. W. Dennis, director of the Biology Division of the Sterling-Winthrop Research Institute; "The Role of the Pharmacist in the Military Service" by Arthur H. Einbeck, consultant to the Surgeon General; "Advances in Antibiotics" by Martin Barr, associate professor of pharmacy, Philadelphia College of Pharmacy and Science; "New Federal and State Laws Affecting Retail Pharmacists in Massachusetts" by Samuel Silverman, executive secretary and general counsel for the Massachusetts State Pharmaceutical Association and Counsel for the Boston Association of Retail Druggists; "U.S.P.XV" by Lloyd C. Miller, director of revision of the U.S.P.; "Newer Thoughts on Ophthalmic Solutions" by Sigurdur Jonsson, professor of pharmaceutical chemistry at the New England College of Pharmacy; "Drugs in the Treatment of Mental Disorders" by O. James Inashima, professor of pharmacology, New England College of Pharmacy; "Merchandising

Panel" with Herman C. No'en, executive vice-president McKesson & Robbins, Harry J. Tower, trade relations department, E. R. Squibb and Sons, Charles Lipscomb, Jr., president I. B. Williams Company.

The New England College of Pharmacy was represented at the mid-winter meeting of the Massachusetts State Pharmaceutical Association by Dr. Herbert C. Raubenheimer, assistant dean, Dr. O. James Inashima, and Dr. Clifford Coles, all members of the faculty.

At the end of January, the Junior Class of the New England College of Pharmacy made a visitation to the Lederle Laboratories at Pearl River, N.Y. An educational tour of the Lederle Laboratories was made by the group, and this was supplemented by a panel discussion conducted by Mr. John A. Pfahl, manager, sales and guest relations. Dr. Herbert C. Raubenheimer and Dr. Mitsuru Nakamura accompanied the group to Pearl River.

On Tuesday, February 7, a special convocation of the students was held. They were addressed by Col. James H. Kidder, M.C., special assistant to the Surgeon General for the Reserve Force, Col. Bernard Abel, M.S.C., chief of the Medical Service Corps of the U.S. Army, Col. James Morgan, M.S.C., senior medical advisor of Massachusetts, Major W. M. Austin, M.S.C., consultant in pharmacy to the Surgeon General, and Major William A. Haendiges, personnel procurement officer. These men spoke to the students in regard to their military obligation under the Reserve Forces Act of 1955. The opportunities for future pharmacists in the Armed Forces were presented to the student body. A lengthy question and answer period followed.

On Thursday, February 9, the Student Branch of the A.Ph.A. had its monthly meeting. Members were addressed by Mr. Carl A. MacDonald of the Hospital Medical Service Division of Parke, Davis and Company, and Mr. Richard F. Rosce of the New England branch of the same firm. After the talks which dealt with the students' future in pharmacy, the film "Going Our Way" was shown. (Herbert C. Raubenheimer)

**Ferris Institute.** Ferris Institute was represented by five pharmacy division faculty members at the national meeting of the A.Ph.A., held in Detroit from April 9-14. Attending Dean Ralph Wilson, were Dr. Edward L. Platcow, Dr. Richard Faust, Clark DeHaven, and Norris Dunham. Dunham presented a paper at the meeting.

Clare Johnson, a Ferris Institute pharmacy student from Drayton Plains, Michigan, was the winner of the annual R. L. McCabe public speaking contest for Michigan pharmacy students, held in Detroit March 27. He was awarded a trophy and a \$50 cash award for his presentation of an original talk, "Now Is the Time," concerning the organization of pharmacists.

This is the second consecutive year a Ferris student has won the award in competition with students from Wayne University, Detroit Institute of Technology, and the University of Michigan. By winning the contest, Johnson kept the large trophy won for Ferris last year by James H. Davis, a senior from Monroe. A win next year would make the traveling trophy the permanent property of the college. (Ralph M. Wilson)

**University of Michigan.** In early March Tom D. Rowe, dean, and R. A. Deno, professor of pharmacognosy, attended the District 4 meeting

of colleges and boards of Pharmacy held in Toledo, Ohio. Dr. Deno discussed a recently completed study entitled "Pharmacy in Michigan." The study was prepared by the Pharmacy Study Group as a part of the Higher Education Study being carried on by the Michigan Council of State College Presidents. The study dealt with the present and foreseeable future manpower needs and educational resources in the various fields of pharmacy. Dr. Deno served as chairman of the group.

A grant for a postdoctoral fellowship has been made available at the College of Pharmacy by the Board of Trustees of the United States Pharmacopeia for research dealing with pharmacopeial problems. The work on this fellowship is to be directed by Albert M. Mattocks, professor of pharmacy and chairman of U.S.P. Sub-committee No. 8—Cyclic Compounds. The grant covers a one-year period beginning July 1, or September 1, 1956, and may be renewable up to a period of three years. The stipend is \$6,000 for the twelve-month period, \$3,600 of which is non-taxable income.

This fellowship offers training and research experience dealing with drug standards including development of new methods, evaluation of errors of laboratory tests and cooperative work with many industrial groups. It is expected that the recipient of this fellowship will contribute measurably to the development and revision of drug standards and will acquire experience in pharmacopeial work which will be an asset to him throughout his career. Persons interested in this fellowship should be American citizens, have a B.S. degree in pharmacy and a Ph.D. in pharmacy or pharmaceutical chemistry.

The College of Pharmacy has recently published a brochure entitled "Graduate Study in Pharmaceutical Fields," for prospective graduate students covering the various areas of available graduate instruction at Michigan.

The Office of Student Affairs recently approved the foundation of a Pharmacy Student Council consisting of representatives of all the classes and organizations in the College of Pharmacy. (Floyd A. Grolle)

**Wayne University.** On February 28, the Michigan Branch of the American Pharmaceutical Association, the Detroit Institute of Technology College of Pharmacy, and the Wayne University College of Pharmacy sponsored a Joint Pharmacy Conference. The program was designed to be of special interest to practicing pharmacists, and nationally prominent personalities were brought in to take part in both the afternoon and evening sessions of the conference. Dr. Stephen Wilson, dean, Wayne University College of Pharmacy, presided at the afternoon seminar which included the following presentations: "Drugs Which Affect the Psychic Process" by Dr. John E. Gajewsky, associate in clinical investigation, Parke, Davis and Company; "Economics of Drug Store Operation" by Dr. Paul C. Olsen, director of marketing research, Drug Topics; "Economics of Prescription Practice" by Robert E. Abrams, secretary, American College of Apothecaries. Dr. Curtis H. Waldon, dean, Detroit Institute of Technology, College of Pharmacy, was toastmaster at the dinner where remarks were presented by Mr. John MacCartney, president-elect, American Pharmaceutical Association and Mr. John J. McKieghan, president, National Association of Retail Druggists. The evening session had Mr. Ambrose C. Hamaker, program chairman, Michigan Branch, American Pharmaceutical Association, as presiding officer. The evening program consisted of a panel moderated by Mr. William

B. Hall, president, Detroit Chapter, Public Relations Society of America. The panel included: "What the Retail Pharmacist Strives to Accomplish with Good Public Relations" by Mr. Albert Pisa, practicing pharmacist; "Steps of the Manufacturer in Promoting Good Public Relations for the Pharmacist" by Mr. Thoburn Wiant, account executive, Young and Rubican, Inc.; "Public Relations from the Woman's Point of View" by Miss Lorene Babcock, public relations consultant; "The Retail Pharmacist, Front Line of Public Relations for Pharmacy" by Mr. Herbert Duncan, manager, Detroit Branch, Parke, Davis and Company. (Stephen Wilson)

**University of Minnesota.** The Seventeenth Continuation Study Course in Pharmacy was held February 27-28 in the Center for Continuation Study. Attendance numbered 125 pharmacists. The program was arranged by Dr. Soine with assistance and suggestions from the Committee on Pharmaceutical Education of the State Pharmaceutical Association. It included the following presentations: "Public Health Problems" by Stewart C. Thompson, professor and assistant director of public health, School of Public Health, University of Minnesota; "Going Our Way," Parke, Davis and Company film; "Relationships of Pharmacist, Detail Man and Doctor" by Donald T. Meredith, director of trade and guest relations, The Upjohn Company; "Oral Pathology Commonly Seen by the Pharmacist" by Norman O. Holte, clinical instructor in oral surgery, School of Dentistry; "The Importance of Rubber Sundries" by J. Bryan Tucker, district manager Davol Rubber Company; "Thermometers, Needles and Syringes" by Eugene J. Folmer, divisional sales manager, Becton, Dickinson Company; "Work Simplification Techniques" by Henry H. Gregg and Lawrence Mueller, pharmacists; "Open Forum on M.S.Ph.A. Activities" by Henry M. Moen, executive secretary, M.S.Ph.A.; "Drugs Used in Hypertension" by Raymond N. Bieter, head of pharmacology, U. of Minn.; "The Management of Hypertension," film of American College of Physicians; "Thorazine and Related Drugs," William J. Wishing, special service representative, Smith, Kline and French Laboratories; "Plus-Four," McKesson & Robbins, Inc. film; "Recent Progress in Antibiotics" by R. S. Griffith, clinical research division, Eli Lilly and Company; "Herbicides" by Robert E. Nylund, associate professor of pharmacology; "Insecticides and Rodenticides" by Laurence K. Cutkomp, associate professor of entomology and economic zoology; "Recent Advances in Corticosteroid Research" by Robert W. Burlew, clinical research division, Schering Corporation; "Therapeutic Applications of Equanil and Phenergan" by Elmer H. Funk, Jr., medical department, Wyeth Laboratories.

During spring vacation and by train a group of twenty-two students visited the Upjohn Company and Parke, Davis and Company. Dr. and Mrs. Netz accompanied as chaperones. Another group of seventeen students made an unofficial trip by air to the Lederle Laboratories and E. R. Squibb and Sons.

On March 6, Mr. F. R. Fox, personnel representative from Eli Lilly and Company, interviewed students for positions at the manufacturing plant in Indianapolis.

Rho Chi Society held a social dinner and get-together with alumni on February 22.

The student branch of the A.Ph.A. held two meetings. In February Mr. A. H. Taylor, a member of the State Board of Pharmacy, gave a talk on professional ethics and conduct. In March the group witnessed

a motion picture film "Going Our Way," presented by Parke, Davis and Company.

Three students received B.S. (in pharmacy) degrees at the winter quarter commencement exercises on March 15.

The rate at which requests for bulletins and supplementary information have been filled during the past two months indicates an increased interest by high school seniors and college students in the study of pharmacy.

Edith Rogers, wife of Dean Charles H. Rogers, died on March 13 from head injuries following a fall. (Charles V. Netz)

**St. Louis College of Pharmacy and Allied Sciences.** A graduate program leading to the degree of Master of Science in Pharmacy will be available to hospital pharmacists in September. Three St. Louis hospital groups—Barnes, St. Mary's, and Veterans Administration—are cooperating with the college by providing hospital internships.

Five four-year, full-tuition scholarships, to be known as Faculty Memorial Scholarships, will be awarded annually by the college, beginning in the fall of 1957, to Missouri and Illinois high school seniors living within a 250-mile radius of St. Louis.

All members of the Class of '56 have applied for membership in the A.Ph.A., to be effective when their student memberships expire. All students at the college, including freshmen, are members of our A.Ph.A. Student Branch.

Mrs. Minnie Schlichting, mother of Dean Arthur F. Schlichting, died February 1, in St. Louis. Mrs. Annabel McFawn Schlichting, wife of Dean Schlichting, died on February 8, in St. Louis.

Mrs. Anna Prokop, mother of Leon D. Prokop, instructor in pharmacology, died on February 13, in Crete, Nebraska. Dr. Carl F. G. Meyer, Honorary Trustee, past president of the college and trustee, died on March 5, in St. Louis. (Walter Rist)

**University of Kansas City.** Dr. Elvin A. Holstius of the pharmacy department has resigned from the faculty to accept a position with the Geigy Pharmaceutical Company as Director of Product Development and Plant Supervisor. Dr. Holstius joined the faculty in 1953. He had previously been associated with Merck and Burroughs Wellcome in their product development laboratories.

Dean Eisenbrandt and the pharmacy faculty are conferring regularly over the proposed new pharmacy building. Plans are on the architect's drawing board now for a two-story building of modern design.

Dean and Mrs. Eisenbrandt and Dr. and Mrs. Rost accompanied almost fifty students on a recent visit to Abbott Laboratories in North Chicago. The following week, Dean Eisenbrandt and Mr. Lyle Willits attended the Kansas Pharmaceutical Convention. (William J. Rost)

**Montana State University.** During last Christmas holiday recess, Gordon Bryan, assistant professor of pharmacology, went to Baltimore, Maryland, where he successfully passed his finals for the Ph.D. degree in Pharmacology. Dr. Bryan expects to return to Baltimore during the coming summer to do some special work on perfusing fluids.

A group of twenty-four junior and senior students of the school with Associate Professor Tracey G. Call in charge spent the interim between the winter and spring quarters in the school's biennial visit to the

midwestern drug-house plants. This year's itinerary included the laboratories of Eli Lilly and Company in Indianapolis, the Upjohn Company in Kalamazoo, and the Searle plant in Chicago.

Dean Jack E. Orr attended the Rocky Mountain Drug Conference in Denver March 24 and 25. (John F. Suchy)

**University of Nebraska.** On January 28, Dean Joseph B. Burt fell on an icy sidewalk, breaking his right leg and ankle in five places. At present he is convalescing at home but hopes to be back at the college before April 1.

The College of Pharmacy served as hosts for a legislative conference sponsored by the Nebraska Pharmaceutical Association which was held at the student union on February 12. After a brief general session, the group divided into four sectional meetings to discuss (1) transportation, (2) narcotics and the Durham Humphrey Law, (3) fair trade, (4) state control policy. The group reconvened to hear summary reports and to consider recommendations for constructive pharmacy legislation to be presented at the next session of the legislature.

Dr. Varro E. Tyler, Jr., associate professor and chairman of the department of pharmacognosy, has been granted a leave of absence beginning March 1, for the purpose of making a five-week consultation trip to Europe on behalf of a commercial firm.

Twenty students, with Dr. L. D. Small as faculty representative, made an inspection trip March 3-8, visiting Parke, Davis and Company in Detroit, and the Upjohn Company in Kalamazoo.

At the February meeting of the Student Branch of A.Ph.A. two films were shown. They were "Do You Want to Fill More Prescriptions Here" by Owens-Illinois Glass Company, and "Going Our Way" by Parke, Davis and Company.

A film made by W. V. Lambert, dean of the University of Nebraska College of Agriculture, during his recent tour of Russia was shown at the February meeting of Alpha Epsilon Chapter of Rho Chi. At their January meeting, Dr. V. E. Tyler, Jr., chapter adviser, presented an interesting discussion of the origin and history of proprietary revenue stamps, illustrating his remarks with examples of stamps from the collection of his father, (Phyllis Platz)

**Rutgers College of Pharmacy.** A number of distinguished guest speakers have taken part in seminars, panel discussions, and lecture series held at the college in recent months. Among the events and speakers are the following:

A group from the headquarters of the American Pharmaceutical Association including Dr. Robert P. Fischelis, Dr. Justin Powers, Dr. Samuel Goldstein, Mr. Charles Rabe, and Miss Gloria Niemeyer presented a panel discussion on the topic, "How the A.Ph.A. Serves American Pharmacy." The discussion was attended by several hundred students and pharmacists, many of whom took part in a lively question and answer period following the panel presentation.

Another panel discussion on the topic, "The Pharmacist's Role in the Recovery of the Patient," included members from various branches of pharmacy and allied professions. Among the speakers were: Mr. John Debus, secretary of the New Jersey Pharmaceutical Association, representing the retail pharmacist; Mrs. Anna C. Richards, chief pharmacist at a local hospital; the administrator of another local hospital; the director

of nursing services of still another hospital; a physician; and a member of the state board of pharmacy.

Mr. Robert E. Abrams, executive secretary of the American College of Apothecaries, addressed a meeting of the A.Ph.A. student branch on the topic, "Pharmacy—Professional and Otherwise."

Dr. John A. Strazza, director of the peripheral vascular diseases clinic at St. Mary's Hospital in Passaic, New Jersey, discussed "The Clinical Evaluation of a New Drug" at a meeting of the Northern New Jersey Branch of the American Pharmaceutical Association, held at the college and attended by students and faculty, as well as pharmacists.

The Twelfth Annual Seminar series sponsored jointly by the college and the local branch of the A.Ph.A. has just come to a close. The lectures were presented, one a night, on February 29, March 7, 14, and 21. They included "The Anemias and Their Treatment" by John B. Jewell, Ayerst Laboratories; "Pharmaceutical Economics" by H. W. Adkins, Crandon Wholesale; "Hallucinogens and Ataraxics" by Frank M. Berger, Wallace Laboratories; and "The Pharmacist in Business Today" by John C. Helenore, Chain Store Age.

Professor Michael Iannarone presented a paper, "The Antiseptic Properties of Specific Inorganic Forms of Iodine," before the Medicinal Chemistry Section of the American Chemical Society. The paper has been accepted for publication in the *Journal of the American Chemical Society*.

Dr. Morton J. Rodman has published three articles recently on aspects of therapeutics in *R.N., A Journal of Nursing*. These included a review of the causes and treatment of coronary artery disease (Jan., 1956); a review of the pathogenesis and treatment of rheumatic fever (Feb., 1956); and an article, "Science vs. Obesity" (March, 1956). (Morton J. Rodman)

**Fordham University.** David Stiles of Abbott Laboratories spoke to the seniors on "Trends in Prescription Compounding" on February 20; David Uran, president of Ethical Advertising, Inc., addressed the senior class on "Professional Advertising Copy" on February 24; Calvin Berger and Nicholas Gesalde, president and secretary, respectively, of the New York State Pharmaceutical Association, talked to the seniors on "Activities and Aims of the New York State Pharmaceutical Association" on March 2; Jack Miller, president of Miller Forge, Inc., explained "The Place of Cutlery in the Professional Pharmacy" to the seniors on March 23. The members of the Student A.Ph.A. heard Robert Schmidt, Sales Manager of Hoffmann-LaRoche, talk on "Detailing" on March 14. The student delegates to the A.Ph.A. convention in Detroit, Michigan, are George Sims, Allen Hirsch, and Joseph Shilling.

Students of the junior and senior classes accompanied by faculty moderator, Professor R. J. Marano, visited the pharmaceutical manufacturers, Upjohn Company in Kalamazoo, and Abbott Laboratories, Inc., in North Chicago, during their Easter vacation.

Reverend Charles T. Taylor, S. J., regent, and Dr. Albert J. Sica, associate dean of the college of pharmacy, attended the American Pharmaceutical Association's Convention held in Detroit, Michigan, April 8-14.

The sophomore class, accompanied by faculty moderator Professor Alfred J. White, visited the pharmaceutical manufacturer, Pfizer and Company of Brooklyn, New York, on April 27, 1956. The same class saw the manufacturing facilities of the Ruppert Brewing Company on

three successive Mondays, beginning with April 23. (Alfred J. White)

**Albany College of Pharmacy.** Plans have been completed for the erection of a new wing to the present college building to provide for a new lecture room, pharmacology laboratory, physics laboratory, and cafeteria. These additional facilities will provide for an increase in the total enrollment from the present three hundred and fifty to approximately five hundred students. A substantial part of the total cost has already been contributed by the alumni as a part of the Diamond Jubilee Celebration to take place on June 6. Founded in 1881 as the Department of Pharmacy of Union University, the Albany College of Pharmacy has been in continuous operation since that time. (Francis J. O'Brien)

**University of North Carolina.** Congressman Carl T. Durham, pharmacist from North Carolina and for several years a member of the House Atomic Energy Committee, addressed the student branches of the school on the subject "Atomic Energy as Related to Peaceful Purposes." He gave special emphasis to medicinal and pharmaceutical aspects.

Dean E. A. Brecht has been commissioned in the inactive reserve of the U.S. Public Health Service; the appointment has to do with a program to establish a large reserve of specialists in the health fields for any possible national emergency.

Dean Brecht and Professors Andrade, Hammerness, Hartung, and Thompson presented seminar papers upon specific phases of the general theme, "Modern Pharmaceutical Practice." The seminar was co-sponsored by the State Pharmaceutical Association and the School of Pharmacy.

Professor Ben F. Cooper conducted students of the third- and fourth-year classes on the annual industrial inspection trip to Parke, Davis and Company in Detroit and Upjohn of Kalamazoo in February.

The Directorship on the North Carolina Pharmaceutical Foundation, Inc., held its annual meeting in February. It was reported by Secretary-Treasurer Brecht that during its nine years of operation it has manipulated over \$200,000.

Dr. H. R. Totten, professor of botany and pharmacognosy, together with five students of his class in pharmacognosy, recently presented a half-hour program over the university's educational station, WUNC-TV, on the subject of "From Drug Plants to Drugs"; the visual aids were in the form of mounted charts showing actual specimens of the various stages of production, ranging from the crude plant to the commercially labelled form of the pharmaceutical preparation.

Robert W. Meschke completed his requirements for the Ph.D. degree and has accepted a research position with DuPont of Wilmington, Delaware.

Darrel L. Gifford, a director of the American Sterilizer Company, recently addressed personnel of the local area upon the equipment and techniques for the manufacture of parenteral solutions.

Professor Walter H. Hartung has retired from the faculty and has accepted a position as chairman of the department of chemistry and pharmaceutical chemistry of the Medical College of Virginia. (Fred T. Semeniuk)

**Ohio State University.** Dr. Loyd E. Harris, acting dean, and Professor Charles L. Williams attended the installation dinner of the Central Ohio Academy of Pharmacy on January 21.

Dr. Arthur Tye spoke on January 24, to the Indianapolis branch of the English Speaking Union at the request of Mr. C. J. Lynn, Vice President of Eli Lilly and Company. Dr. Tye addressed the Kappa Epsilon sorority on March 7.

Drs. Loyd E. Harris and Rupert Salisbury represented the College of Pharmacy at the District Four joint meeting of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy on March 4-6, at Toledo, Ohio. Dr. Harris was a member of a panel that discussed "The Objectives of Graduate Education."

Drs. Frank W. Bope, Earl P. Guth, Loyd E. Harris, John W. Nelson, Rupert Salisbury; Arthur Tye, Jack L. Beal, and Mr. Arthur Lytle of the faculty plan to attend the A.Ph.A. convention in Detroit. Most of the above will appear on the program.

Senior students and their counselors from the surrounding area of Columbus have been invited to visit the College of Pharmacy on May 11 for "Pharmacy Day." A tour, demonstrations, displays, question and answer periods, and a dinner are planned.

A well-attended Ohio Pharmaceutical Seminar was held March 19-22, sponsored by the Ohio State Pharmaceutical Association in cooperation with the College of Pharmacy and the College of Commerce and Business Administration of The Ohio State University. Topics discussed during the morning sessions were as follows: Dr. Arthur Tye discussed the uses of adrenal corticoids in the treatment of degenerative diseases and a review of anti-hypertensive drugs and their pharmacology; Dr. John W. Nelson discussed the pharmacology of ataractic drugs and the mode of action of anti-tussives, anti-histamines, anti-motion sickness, and anti-emetic drugs; Dr. Frank W. Bope presented the chemical relationships of the steroids; Dr. Earl P. Guth lectured on ophthalmic solutions and demonstrated how these may be handled by the pharmacist; Dr. Rupert Salisbury discussed controlled release dosage forms; Dr. Jack L. Beal presented a topic on plant drugs through the folk medicine period up through their demonstrated usefulness in modern medical practice. Other topics presented by men outside the College of Pharmacy faculty were: Veterinary Products in Pharmacy by Dr. Lawrence Price, Lederle; Virus Vaccine Research and Production by Dr. R. N. Hull, Lilly; Fundamentals of Radioactivity by Dr. John N. Cooper, Physics Department; Radioactive Isotopes in Pharmacy by Mr. James Searles, Abbott Laboratories.

The afternoon sessions were presented by the College of Commerce and Business Administration which presented the following topics: Employee Selection and Training; Employee Supervision; Salesmanship; Business Law; Merchandising; Advertising; How to Make a Business Talk; Sales Tax; Workmen's Compensation; Insurance; and Business Correspondence.

Each student was granted a certificate of attendance at the completion of the four-day seminar. (Jack L. Beal)

**Southwestern State College.** Jackson Lee Strother, father of Dean W. D. Strother, died October, 1955. Age: 93. (W. D. Strother)

**University of Oklahoma.** Professor Jean Brown was one of the ten staff and faculty chaperones to accompany the O.U. Band to the Orange Bowl, Miami, Florida. Miss Brown and Miss Dorothy Truex, counsel-

or of women, chaperoned the twenty-nine girl members of the Band. Several members of the O. U. Band are pharmacy students.

Dr. John B. Bruce, associate professor of pharmaceutical chemistry at the O. U. College of Pharmacy, has returned from the monthly business meetings of Alpha Chi Sigma, national professional chemistry fraternity, held at North Texas State College, Denton, Texas, on January 8, and at the University of Texas, Austin, on February 12 and 13. As district counselor for Alpha Chi Sigma, Dr. Bruce helps inspect the local chapters and meets with the deans and advisors, faculty and officers of the local organizations.

Dean and Mrs. Ralph W. Clark proudly announce the birth of their first grandchild, Steven Brandon Clark, who was born January 26, at Ft. Sill, Oklahoma. While weighing in at only five pounds, four ounces, Steven is doing nicely, as is his mother. His father, who is a first lieutenant in the 583rd F.A.Bn., was able to be home on an emergency leave from Ft. Bragg, North Carolina. In April, the family will go to Japan on Operation Gyroscope.

Dean Ralph W. Clark, Dr. Ralph Bienfang, and Dr. John Bruce were forced to cancel their plans to attend the NABP-AACP district meeting in Austin, Texas, on February 6 and 7. The trio had planned to travel by automobile but that weekend Norman and surrounding parts of the state were hit by the worst snow and ice storm of the winter. All three were scheduled to participate in the program and were very disappointed in not being able to attend.

As a member of the national pharmaceutical education committee on public relations, Dean Clark journeyed to Cincinnati, Ohio, on February 9, to attend a meeting of the committee. Under discussion were ways of improving public relations between pharmacy and the public with emphasis on education. Other committee members present were Dr. W. L. Blockstein, University of Pittsburgh, Mr. William G. Wilcox, Ohio State University, and Mr. John P. DeCamp, University of Cincinnati.

Mr. Charles C. Rabe of the national office of the American Pharmaceutical Association visited the O.U. Student Branch on February 16. After meeting with the dean and faculty and officers of the local student branch, Mr. Rabe concluded his visit at a dinner and evening meeting in the Ming Room, Student Memorial Union Building.

The Oklahoma State Board of Pharmacy examination was given at the O.U. College of Pharmacy on February 16. The Student Branch of A.Ph.A. was host for the members of the State Board at a luncheon in the Union Building.

Scholarships awarded to worthy pharmacy students were announced by Dean Ralph W. Clark, speaking for the faculty of the University of Oklahoma College of Pharmacy, during the sixth annual Pharmacy Seminar held March 8, at the Lockett Hotel, Norman. The faculty elected the recipients of all awards and scholarships which included The American Foundation for Pharmaceutical Education scholarships. Also announced were two scholarships from funds contributed by the Southwestern Drug Corporation, Dallas, Texas. An award for the outstanding senior woman in the College of Pharmacy was made by the Ladies Auxiliary of the Oklahoma Pharmaceutical Association. Two awards of books for outstanding ability in pharmacology and in practical pharmacy presented by Merck & Co., Inc., were awarded. These awards were established fifteen years ago by Dean Clark who was, at that time, director of the Pharmacy Service Department of Merck & Co., Inc.

Dean Ralph W. Clark has been carrying out a program of visiting Oklahoma state colleges and high schools. Early in February he called on colleges at Seminole, Ada, Tishomingo, Poteau, and Wilburton. During the latter part of the month, the Dean visited Muskogee Junior College, Oklahoma Baptist University at Shawnee, and Connors State Agricultural College at Warner. During March, Oklahoma College for Women, Chickasha, Phillips University at Enid, and Cameron State Agricultural College at Lawton were visited. These college contacts are made in the interest of effecting transfer students with the minimum loss of time and credit.

Dean Clark appeared before the Oklahoma Legislative Council Subcommittee Studying Dangerous Drug Laws. The Sub-committee met on March 10, in Tulsa to evaluate the actual operation of present laws on dangerous drug control; to determine the effectiveness of recent legislation on the subject; and to analyze proposals for the enactment of new laws and the repeal or amendment of present laws. Dean Clark complimented the Oklahoma Pharmaceutical Association and the State Board of Pharmacy for their activities. He suggested a study be made considering restriction of paregoric and of hypodermic needles to prescription use only.

Dr. Ralph Bienfang, professor of pharmacognosy, was elected by the faculty of the O.U. College of Pharmacy as their delegate to accompany Dean Clark to the A.Ph.A. meeting in Detroit, April 8-13.

Senior students, their wives, and faculty members were guests of McKesson & Robbins on March 23, at a luncheon held in Oklahoma City. After lunch the group visited the offices and warehouses of their host who explained the general method of operation of most of the seventy-four wholesale drug houses operated throughout the U.S. by McKesson & Robbins, Inc.

Dr. W. Marvin Davis, assistant professor of pharmacology, and Dean Clark presented a seminar for the Science Club of Oklahoma Baptist University on March 14, on the use and misuse of drugs. Demonstration of the effects of drugs and their antidotes on live white rats was performed.

The Lions Club of Lindsay was host to Dean R. W. Clark on March 12, when he appeared as guest speaker for their meeting. He reports that the group was interested in a discussion of drugs. On March 13, the Chemist Club of Central Oklahoma, meeting in Oklahoma City, invited Dean Clark to be their guest speaker. His topic was "The Pharmaceutical Industry." Several high school students were guests of the club.

Chosen as one of the outstanding dietetics majors in state colleges, Ann Clark, Norman senior, daughter of Dean and Mrs. Clark, received a \$25 award, March 16, from the Oklahoma Dietetics Association at a luncheon in Oklahoma City. Each year the association recognizes such outstanding students. Miss Clark was chosen for the award because of her exceptionally high grade average and outside activities.

Seventy-five pharmacists from the state, in addition to approximately 125 other guests and students, attended the O.U. College of Pharmacy Sixth Annual Seminar in Norman on March 8. Many alumni of the college returned to visit with the faculty. The program, including an address on radioactive isotopes by Dr. Henry H. Turner, Oklahoma City, and papers read by Dr. Ralph Bienfang and Dean Clark were well received. Also of interest was a film presented by NWDA and Owens-Illinois titled "Do You Fill Prescriptions Here?" and an address by Mr.

Darrell L. Gifford, American Sterilizer Company, on intravenous solutions.

Guest speakers invited to address Miss Jean Brown's senior class in pharmacy administration have been Mr. Jack Patten of the Security National Bank of Norman who spoke on "The Function of Banks in the Operation of a Small Business"; Mr. H. K. McShane, Rexall druggist from Monett, Missouri, discussed "The Management of a Small Retail Drug Business"; Mr. Samuel Alfend who is Chief of the Kansas City District of the Food and Drug Administration explained the Federal Drug and Cosmetic Act; Dr. Pierce Kelly, Norman, author of "How to Operate and Manage a Small Business," expanded that topic as it applies to the drug business; Mr. Leon Conley, co-owner of the Airline Pharmacy in Oklahoma City, spoke on "Taxes and Records Pertinent to the Small Drug Business"; and Dean Erl Sneed, Jr., of the University of Oklahoma College of Law, spoke on "So You Need a Lawyer." Miss Brown, as instructor of the class, arranged for the guest speakers to illustrate the different problems facing a retail druggist in the operation of a modern business. Other guest speakers will be present during the remainder of the semester.

Dr. John Bruce, assistant professor of pharmaceutical chemistry, was guest speaker at the Wewoka Rotary Club on March 22. His topic was "New Drugs." On March 24, Dr. Bruce, with other members of the O.U. collegiate chapter of Alpha Chi Sigma, was a guest of the professional chapter at Borger, Texas, where they toured the Phillips Petroleum Plants.

An open house will be held in the College of Pharmacy Building on May 2, as all pharmacy students proclaim Pharmacy Day! Pharmaceutical manufacturers have expressed a desire to participate by setting up professional displays. Any manufacturer who has supplied merchandise for the College of Pharmacy Apothecary is cordially invited to participate. (Ralph W. Clark)

**Oregon State College.** Professor Leo A. Sciuchetti has been elected by pharmacy staff members to a three-year term on the Faculty Council of Oregon State College.

Dean George E. Crossen has been notified that the school of pharmacy has been fully accredited through 1960 and given an "A" rating on its course of study, staff, and facilities. The inspection team was composed of Drs. Melvin W. Green and Pat H. Costello, both of Chicago and both representing the American Council on Pharmaceutical Education, Dr. Fred Stetson of Eugene, representing the Northwest Collegiate accrediting agency, and Ralph Robertson, representing the Oregon Board of Pharmacy.

Herman C. Forslund represented Oregon State College as a member of a team of the Oregon System of Higher Education on high school visitations, February 20-24. He spoke to senior classes at the following high schools: Myrtle Creek, Grants Pass, Central Point, Medford, Ashland, Lakeview, and Klamath Falls.

Thirty-three pharmacy students and wives left Corvallis on February 24, to make the biennial college-approved trip to the midwestern plants of pharmaceutical manufacturers. Staff members accompanying the group were Leo A. Sciuchetti and Muriel Vincent. Three Portland wholesalers, McKesson & Robbins, Northwestern Drug Company, and Mutual Wholesale Drug Company assisted the group by furnishing a meal each

aboard the Union Pacific Domeliner "City of Portland." After a most educational and enjoyable visit at Eli Lilly and Company, the Upjohn Company, and Abbott Laboratories, the group returned to Corvallis on March 4.

Mr. Victor G. Vincent, father of Dr. Muriel Vincent, passed away in Portland on January 9. (Leo A. Sciuchetti)

**Philadelphia College of Pharmacy and Science.** The college observed the 135th anniversary of its founding on February 23. At a student convocation, at which Dr. Ivor Griffith presided, honorary degrees were awarded to L. E. F. Minnich and William H. Wjitman. The speaker was Dr. Gustav J. Martin.

At the alumni dinner marking Founders' Day, the speaker was Dr. E. Emerson Leuallen, a graduate of the college and now dean of the School of Pharmacy and Columbia University.

A research grant has been placed at the college by the National Drug Company.

Dr. Takeru Higuchi received the Rho Chi award February 29, and delivered the Julius W. Sturmer Memorial Lecture, "The Empiric vs. the Scientific in Pharmaceutical Research."

Members of the faculty continue participation through the second semester on the WFIL-TV University of the Air.

The members of the college have re-elected Dr. Ivor Griffith president for the sixteenth consecutive year. (John E. Kramer)

**Temple University.** A Temple University student will travel to Detroit April 8, to receive the first prize on behalf of the school of pharmacy for submitting the best window display of any school of pharmacy. The prize will be awarded to Eugene Sebastianelli by the National Pharmacy Week Committee. The window has been photographed and has appeared in several national publications. Mr. Sebastianelli and two other senior students, Simon Denenberg and Mrs. Marlene Rafner, designed and installed the display. This marks the sixth year that the students, under the direction of Professor John Lynch, have won the national contest. The activity will be part of the Annual Convention of the American Pharmaceutical Association.

Dr. Frank H. Eby, recently elected National Secretary-Treasurer of Kappa Psi Pharmaceutical Fraternity, will address student organizations at University of Arkansas, University of Texas, University of Arizona, University of New Mexico, when he embarks on a university tour the 24th of April under the auspices of that organization.

Dean Joseph B. Sprowls presided at the First Annual Pharmacy Forum held at the Benjamin Franklin Hotel, March 14, 1956. The forum was jointly sponsored by several organizations and attracted many pharmacists in the Philadelphia area. It consisted of three sessions with three prominent speakers participating in each session over a full day's program. Subjects were scientific in nature as well as philosophical. (Fred B. Gable)

**University of Pittsburgh.** Dr. Julius A. Koch, dean emeritus, died February 10, 1956.

Four members of the University of Pittsburgh School of Pharmacy staff have appeared on recent shows produced by the public relations department of the Pitt Health Center. The series, entitled "Highroads

to Health," is produced on Station WQED (Channel 13), Pittsburgh's educational television station.

Mr. William L. Blockstein, administrative assistant to the dean and instructor in pharmacy, and Dr. Joseph D. McEvilla, assistant professor of pharmaceutical administration, did a round-up on pharmacy as a profession. After a brief discussion of the evolution of pharmacy as a profession, they explained the educational requirements needed to become a pharmacist, the status of the pharmacist in his community and as a consultant to the medical profession, and the areas in which a registered pharmacist could work, along with other topics.

The next production by pharmacy members featured Dr. Joseph A. Binaculli, professor and chairman of the department of pharmaceutical chemistry, and Dr. Joseph P. Buckley, associate professor of pharmacology. They discussed "The Development of New Drug Products," from the isolation or synthesis of chemical compounds on through to the distribution of the finished product. Included in their discussion were variations in chemical structure, the development of ideas for drug products, synthesis, pharmacological investigation, toxicology, clinical trial, product development and formulation, and the Food and Drug Administration requirements. Demonstrations depicting research on hypotensive agents and the action of drugs on intestinal strips were shown.

Dr. Edward C. Reif, dean of the School of Pharmacy, was featured on WQED, Pittsburgh's educational television station, in a discussion of "Drugs of the Scriptures." This program was carried on the regular university program, "Pitt Reports." Mr. William S. Tacey, director of radio and television for the university, served as moderator. Dr. Reif's talk depicted the old and the new in drugs and drug products, showing the relation to today's therapeutic agents of those of Biblical days.

On another of the regularly scheduled programs on "Pitt Reports," Dr. Edward P. Claus, professor of pharmacognosy, and James A. Mansmann, M.D., assistant professor of medicine at Pitt's Medical School, discussed "Allergy." The program included a discussion of the botanical causes of hayfever and allergy, the techniques involved in making pollen counts, skin testing for allergenic substances, and the treatment of allergic disorders. Visual material included slides, pollen grains, and plant specimens of allergenic materials.

The School of Pharmacy has received a grant of \$2,538 from the Lakeside Laboratories, of Milwaukee, Wisconsin, for the continuation of an evaluation of hypotensive agents used in the treatment of hypertension. The study will be conducted under the supervision of Dr. Joseph P. Buckley, associate professor of pharmacology.

Mr. William L. Blockstein, administrative assistant to the dean, presided at a meeting of the Joint Committee on Public Relations in Pharmaceutical Education of the American Association of Colleges of Pharmacy and the American College Public Relations Association, at their February meeting at the University of Cincinnati.

Dr. Joseph D. McEvilla, assistant professor of pharmaceutical administration, presented a paper, "A Concept of Prescription Pricing," at a recent meeting of the Pittsburgh Branch of the American Pharmaceutical Association. The paper was published in the *Prescriptionist*, in the February, 1956, issue.

Dr. John J. DeFoe, assistant professor of pharmacology, spoke on "The Rh Factor in Human Blood" before the Pittsburgh Branch of

the American Pharmaceutical Association, and later presented the same topic to the Cambria Somerset Pharmaceutical Association.

Dr. Joseph P. Buckley, associate professor of pharmacology, discussed "Recent Advances in Pharmaceutical Research" before the Brighton Road Kiwanis Club, and later spoke on "Therapy in Hypertension" to the internes of St. Francis Hospital, Pittsburgh.

Dr. Edward C. Reif has spoken on the topic "Drugs of the Scriptures" before the Brighton Road Kiwanis Club and the Men's Brotherhood Class of the Emmanuel Lutheran Church in Pittsburgh.

Mr. William L. Blockstein, administrative assistant to the dean, has published "The Public Relations Value of a College of Pharmacy Diploma and a State Board Certificate" in the *American Journal of Pharmacy*, volume 127 (November, 1955) and an article for the "Modern Pharmacies" section of the *American Professional Pharmacist*, for January, 1956. Another article, "Write Your Own Publicity," appeared in the August, 1955, issue of the *Prescriptionist*.

Drs. Edward P. Claus and Joseph P. Buckley spoke on the subject "Rauwolfia" before the Perry High School Biology Club recently.

Dr. Edward P. Claus, professor of pharmacognosy, has been chosen as chairman of the Pollen Committee of the Pittsburgh Allergy Society. He has also spoken on "Plants Used in Medicine" to the Garden Department of the South Hills Womens Club, and on the topic "Recent Investigation of Medicinal Plants," which was presented to the Botanical Society of Western Pennsylvania.

"Public Relations and You" was the topic discussed by Mr. William L. Blockstein at the March meeting of the Beaver County Pharmaceutical Association. (W. L. Blockstein)

**Medical College of South Carolina.** The pharmacy seminar sponsored by S.C.Ph. Association in collaboration with the Schools of Pharmacy of the University of South Carolina and the Medical College of South Carolina was held in Charleston, February 8. Dr. Paul Wilcox, assistant director of research, Sharp and Dohme, and Mr. Paul Wiesman, chief pharmacist, Norwich Pharmacal Company, were the main speakers. The seminar was well attended and most successful.

Mrs. Ernest Molpus and Miss Betty Christopoulos have been appointed pharmacists in the new Medical College Hospital Pharmacy. They are graduates of the School of Pharmacy of the Medical College.

Dale H. Cronk has been appointed assistant professor of pharmacy. He is a candidate for the Ph.D. at the State University of Iowa, summer, 1956. (William A. Prout)

**South Dakota State College.** Dr. Guilford C. Gross has been appointed to the Committee of Revision of the Pharmacopeia. He will serve on the sub-committees on pharmacognosy and biologic assays and tests.

A two-day refresher course for pharmacists will be held April 10-11. Dr. Guilford C. Gross is in charge of the program which will include topics of interest to the practicing pharmacist. Other staff members who will appear on the program are Dean Floyd J. LeBlanc, who will deliver the address of welcome, and Dr. Winthrop Lange who will present a paper on "New Synthetic Suspending Agents."

Dr. L. W. Busse, University of Wisconsin, School of Pharmacy, will be the principal speaker at the Rho Chi Banquet to be held April 3.

Dr. Winthrop Lange will present two papers at the Scientific Section

of the American Pharmaceutical Association April 11-13. (Clark T. Eidsmoe)

**University of Tennessee.** Dr. James G. Young is the new staff member at the School, having received his appointment as assistant professor of pharmacy and chemistry effective February 1, 1956. Dr. Young completed his doctorate at the University of North Carolina and for the two years previous to his appointment has been research biochemist at Walter Reed Institute of Research in Washington, D.C.

The Student Branch of the A.Ph.A. had as guest speaker at its March 13 meeting Mr. Grover Bowles, Chief Pharmacist of the Baptist Memorial Hospital, Memphis, Tennessee. Mr. Bowles' interesting and enlightening topic was "Hospital Pharmacy."

The Pharmacy Building will undergo extensive remodeling and the addition of a new floor, the work to be completed in 1957. (Albert H. Musick)

**University of Houston.** Dr. N. M. Ferguson, dean of the college of pharmacy and professor of pharmacognosy, is the author of *A Textbook of Pharmacognosy* recently published in New York and Canada by the Macmillan Company.

The book, which has been used in a semifinal form in Dr. Ferguson's classes for the past three years, is primarily designed for use in the standard pharmacognosy courses as offered in colleges of pharmacy in the United States. It classifies the crude drugs according to the chemistry of their constituents and contains important up-to-date information on incompatibilities of crude drugs as well as the names of proprietary preparations containing these drugs. Chapters on antibiotics, bacterial products, blood derivatives, allergens, vitamins, hormones, and insecticides are also included, making the text a valuable ready reference for the practicing pharmacist.

Dr. Ferguson is also the author of *A Laboratory Manual of Pharmacognosy* which was published in the fall of 1955.

Dr. Ferguson, dean of the College of Pharmacy, recently accepted the invitation from Mr. Ben C. Belt, president of the Houston Chamber of Commerce, to serve as a member of the 1956 Civic Affairs Committee. The objective of this committee is to encourage the development of those facilities which contribute to health, cultural, educational, and community improvement. Dr. Ferguson also served on this committee during the year of 1955.

Dr. Don C. Kroeger, associate professor of pharmacology, attended combined meetings of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy. Dr. Kroeger presented a paper in a panel discussion involving the predicted shortage of instructional staff for the five-year program in colleges of pharmacy. The meetings were held February 6 and 9, in Austin, Texas.

Dr. M. G. Webber, associate professor of pharmacy, represented the University of Houston College of Pharmacy at the Eighth Annual Hospital Seminar in Austin, Texas, on February 11 and 12. The seminar was conducted jointly by the University of Texas College of Pharmacy Division of Extension and the Texas Society of Hospital Pharmacists.

Dr. R. L. Boblitt, assistant professor of pharmacy, represented the University at a conference with the Board of Directors of the Texas Pharmaceutical Association. The meeting was held on February 23, at the

Statler Hotel in Dallas, Texas.

Inspection of the College of Pharmacy for continued accreditation was held March 8 and 9, by the American Council on Pharmaceutical Education.

Included on the inspection committee were: Dr. Melvin W. Green, director of educational relations for the council; Dean T. D. Rowe, dean of the University of Michigan College of Pharmacy; Mr. Leon L. Kahaneck of Hellettsville, Texas, a member of the Texas State Board of Pharmacy; and Mr. Frank Reece of Houston, also a member of the State Board.

In addition to visiting classes and inspecting the laboratories in pharmacy and allied sciences, the committee addressed the students of the College of Pharmacy and held conferences with Dean Ferguson and other members of the pharmacy faculty. The examination was a routine one for continuation of accreditation.

Dr. C. S. Koh, former dean of the Chungang University School of Pharmacy, Seoul, Korea, visited the College of Pharmacy on February 3 and 4. Following the completion of his tour of various colleges in the United States, Dr. Koh will return to Korea and use his observations of curricula and administrative policies in the American pharmacy schools to help develop the pharmacy school in Seoul.

Mr. Charles C. Rabe, assistant to the secretary of the American Pharmaceutical Association, Washington, D.C., visited the College of Pharmacy on February 15. While on the campus, Mr. Rabe spoke before the Student Branch of the American Pharmaceutical Association on the history and purpose of the parent association. At a banquet held at Milford House on the evening of February 15, Mr. Rabe presented the charter to the Southwest Texas Branch of the American Pharmaceutical Association. The fifty-five pharmacists and members of the branch who attended the charter presentation banquet heard Mr. Rabe deliver a very inspiring message.

A combined meeting of the University of Houston Student Branch of the A.Ph.A. and the Pre-Med and Pre-Dent Societies was held at the College of Pharmacy on March 16. Mr. Leonard Cannon of the Upjohn Pharmaceutical Company spoke to the group, and the movie "Stresses in the Abdomen," showing actual operations on the gall bladder, peptic ulcer, and ruptured blood vessels, was presented.

Dr. B. R. Hooper, director of loans and scholarships, recently announced that two seniors, four juniors, and nine sophomores in the College of Pharmacy have received scholarships. Donors of the scholarships include: Mading's Drug Company, Behrens Drug Company, Doyle's Pharmacies, Inc., Margraves Drug Store, Southwestern Drug Corporation, The Prescription House, Inc., Harris County Pharmaceutical Society, The Ladies Auxiliary to the Harris County Pharmaceutical Society, Houston Drug Travelers, and Jones Apothecary. (Mrs. Sue H. Rouse)

**University of Texas.** Sixty-seven senior pharmacy students were conducted on a tour to Waco on January 13, to visit a number of drug firms consisting of Behrens Drug Company, Red Arrow Laboratories, and Southwestern Wholesale Drug Company.

Mid-year commencement exercises for twenty graduating seniors, including five women, were held on January 30. Dr. Andres Goth, professor of pharmacology at Southwestern Medical School, Dallas, delivered a commencement address on the subject of interprofessional relations in the health professions. The Master of Science in Pharmacy

degree was awarded to Vincent Bernard Christ and Homi Hirjiboy Kavarana.

Lambda Chapter of the Phi Delta Fraternity was reactivated on the university campus on March 24, after a period of dormancy covering a number of years. About fifteen students were initiated as the core of the reactivated chapter.

The thirtieth annual meeting of Boards and Colleges of Pharmacy of District No. 6 was held in Austin on February 6 and 7. Dr. C. O. Wilson, professor of pharmaceutical chemistry, was Chairman for the Colleges, and Howell R. Jordan of Austin was Chairman for the Boards. Appearing on the program were the following speakers and their topics:

- (1) W. S. Daugherty, Kansas Board, "Experience with Objective State Board Examinations."
- (2) Walter Cousins, "Physician-Owned Pharmacies and their Effects on the Profession."
- (3) L. L. Eisenbrandt, Kansas City University, "Is Pharmacy as a Profession Progressing, Regressing or Standing Still?"
- (4) S. G. Mittelstaedt, University of Arkansas, "Opportunities for Pharmacy in the Atomic Age."
- (5) Henry Henly, McKesson & Robbins, "Pharmacy's Public Relations and the Prescription Department."

Round-table discussions were also scheduled on the following topics:

- (1) "The Five-Year Course and its Effects on the Experience Requirements."
- (2) "The Future Enrollment in Colleges of Pharmacy and its Effects on the Faculty Requirements."

The 8th annual Hospital Pharmacy Seminar was held at the College of Pharmacy on February 11-12. Faculty members appearing on the program were Mrs. E. Jane Hall, assistant professor of pharmacy administration, and Dr. F. V. Lofgren, associate professor of pharmacy.

Dean Burlage, Assistant to the Dean W. R. Lloyd, Dr. C. O. Wilson, and several other staff members plan to attend the A.Ph.A. Convention in Detroit in April.

The college received its periodic inspection by a visit early in March of a team consisting of Dr. Tom Rowe, Dr. Melvin Green, and Mr. Howell Jordan of the Texas Board of Pharmacy.

Mr. Charles Rabe, assistant to the secretary of the A.Ph.A., visited the campus on February 14, and addressed the student body.

Mrs. J. E. Davis, wife of Professor Davis, recently spent several weeks in Little Rock, Arkansas, undergoing a medical check-up. Professor Neville has also returned to the classroom this semester after an absence of several months because of illness.

Members of the graduating classes of June and August, as well as those graduating in January, 1957, will journey to New York during the Easter holidays to visit the E. R. Squibb and Company Laboratories, as well as other pharmaceutical firms in the vicinity. The trip will be made by train. (C. C. Albers)

**Medical College of Virginia.** Drs. Warren E. Weaver and Milton L. Neuroth accompanied the senior class on a visit to Parke, Davis and Company and Upjohn pharmaceutical houses.

The M.C.V. School of Pharmacy will be represented at the A.Ph.A. and AACP conventions by Dr. M. L. Neuroth, Dr. W. E. Weaver, and Russell Fiske.

At the Animal Health Seminar held recently in Roanoke, Virginia, Dr. Warren E. Weaver gave a report on the progress in animal health instruction being made at the M.C.V. School of Pharmacy. (M. L. Neuroth)

**State College of Washington.** Research grants totaling \$6,250 were received by Drs. White, Gibson, Scott, Hammarlund, and Bhatia. Two additional half-time assistantships have become available for the next school year as a result of these grants.

New equipment ordered includes a paper electrophoresis apparatus and a granulation drying oven.

Dean Haakon Bang, Dr. A. I. White, and Dr. M. R. Gibson will be attending the A.Ph.A. convention in Detroit. (V. N. Bhatia)

**University of Washington.** Dr. Louis Fischer has recently been elected Grand Vice Regent.

Dr. Brock Chisholm, Walker-Ames Professor in Psychiatry, spent Tuesday, February 21, visiting the College of Pharmacy. During that time he gave three lectures to the student body, the faculty, and the Puget Sound Branch of the American Pharmaceutical Association. Dr. Chisholm was the first Director General of the World Health Organization, United Nations.

Dr. Alain Huitric is giving a special non-credit course in theoretical organic chemistry to the graduate students and faculty of the college. This follows a series of lectures on radioactive isotopes given by Dr. E. H. Djao. Both men are on the staff of the college. The graduate students and faculty were also favored with an excellent illustrated lecture on the use of the microscope by Mr. George Needham, an alumnus who is one of the outstanding authorities in the field.

Rho Chi Society held its annual initiation at the Four Winds, March 7; fourteen new members were added to its roster. Mr. Jim Bracken talked to the initiates on the problems and responsibilities facing a professional pharmacist.

Dr. Nathan Hall's Operative Pharmacy Laboratory has just been renovated and painted. Stainless steel sinks were added.

The Seattle Lions' Club presented a \$200 scholarship to Mr. Joel Ekweme, an undergraduate student from Nigeria. Other scholarships were awarded recently to Marie Oldenberg, Richard Ramsey, Ralph Hollingsworth, and Helen Eng, by the American Foundation for Pharmaceutical Education; to Mrs. Venda Holt, by the Pierce County Women's auxiliary; and to Joel Ekweme by the Spokane Women's Auxiliary.

Dr. and Mrs. L. Wait Rising attended the University of British Columbia College of Pharmacy graduation banquet the 9th of March. On the 14th of March Dr. Rising spoke to the Chehalis Unit of Rotary International. (L. Wait Rising)

**University of Wisconsin.** Professor Takeru Higuchi delivered the Julius W. Sturmer Memorial Lecture on February 29, at the Philadelphia College of Pharmacy and Science. This lecture was sponsored by the Alpha Tau Chapter of the Rho Chi. While in the East, Dr. Higuchi also gave a lecture at Hoffman-La Roche, Inc., and spoke before the Analytical and Microchemical Group of the A.C.S. Section at the University of Pennsylvania.

Dr. Lloyd M. Parks has been appointed dean of the College of Pharmacy, Ohio State University, and will assume his duties on July 1.

Attending the District 4 meetings of the AACP-NABP in Toledo, were Dean Arthur H. Uhl, Professor Lloyd M. Parks, and Professor William S. Apple. Dr. Uhl spoke on graduate study in pharmacy, and Dr. Apple discussed retail pharmacy with respect to the changing pattern of distribution.

Two local dental societies were addressed by members of the faculty. In February, Dr. Apple, coordinator of pharmacy extension services, and a team consisting of Drs. Dale E. Wurster, Jack W. Miller, and Alex Berman presented a series of talks before dentists in LaCrosse. This was followed on March 19, by a program given before a group of dentists in Manitowac by Dr. Wurster and Mr. Daniels.

Dr. John E. Christian of Purdue University, School of Pharmacy, gave the annual Kremers Memorial Lecture sponsored by Eta Chapter of the Rho Chi Society. His talk dealt with the application of radioisotopes in medicine and pharmacy.

A one-day seminar held on February 24, by the Wisconsin Society of Hospital Pharmacists in cooperation with Charles Pfizer and Company, Inc., was attended by Dr. Louis W. Busse and Dr. Alex Berman. The latter discussed historical aspects of hospital pharmacy.

New contracts with armed forces medical procurement agencies have been signed covering investigations of the stability of amyl nitrite and epinephrine.

Two new pieces of equipment have been recently purchased by the school—a Drage Viscometer, and a polarimeter.

Seven University of Wisconsin pre-pharmacy students have been awarded scholarships of \$100 each for the second semester. The students, either enrolled in pre-pharmacy courses or applicants for admission to the School of Pharmacy, include five freshmen and two sophomores. The scholarships, awarded from the School of Pharmacy grant and scholarship fund, are made possible through contributions from various practicing Wisconsin pharmacists. (Alex Berman)

**University of Wyoming.** Dr. G. D. Humphrey, president of the University of Wyoming, was recently elected secretary of the Presidents' Council of the Association of Land-Grant Colleges and Universities. The council is made up of the presidents of all institutions belonging to the Land-Grant Association. A member of the organization since 1934, when he became president of Mississippi State College, Dr. Humphrey has the second longest term of service among members of the Presidents' Council.

Dr. Irene Rosenfeld, pharmacologist at the Agricultural Experiment Station of the University of Wyoming, gave a talk on "Studies on the Fate of Selenium in Live Animals Using Selenium 75" at the meeting of the Wyoming Section of the American Chemical Society held in the Wyoming Union.

Mr. David Stiles, director of market development for Abbott Laboratories of Chicago, visited with Dean David W. O'Day and the other members of the faculty of the University of Wyoming College of Pharmacy to discuss with them the results of prescriptions surveys which he has made in cooperation with representatives of colleges of pharmacy and others throughout the United States.

Dr. Raymond J. Kahl, associate professor of pharmaceutical chem-

istry at the University of Wyoming College of Pharmacy, gave a very interesting talk on the "Analogs of Some Cympathomimetic Amines" at the February 21 meeting of the Wyoming Section of the American Chemical Society held in the lecture room of the Chemistry-Zoology Building on the University of Wyoming Campus.

Examination for registered pharmacists in Wyoming was conducted by the Wyoming State Board of Pharmacy at the University of Wyoming College of Pharmacy on Friday and Saturday, February 3 and 4. Five candidates, all graduates of the University of Wyoming College of Pharmacy, were present for the examination. The members of the State Board of Pharmacy also had a short meeting with Dean David W. O'Day while present for the examination.

Dr. David W. O'Day, dean of the College of Pharmacy, has been asked to give the address at the May initiation meeting of the Wyoming Chapter of Sigma Xi.

At the meeting of the Rocky Mountain Drug Conference, which was held in the Cosmopolitan Hotel on March 23 and 24, Dr. David W. O'Day, dean of the College of Pharmacy, was elected President of the Conference for the coming year, Dr. Raymond J. Kahl, associate professor of pharmaceutical chemistry, and Mrs. Georganna Berger, instructor in pharmacy, were also in attendance at the meeting where faculty members from the college of pharmacy, state board members, officials of pharmaceutical associations, students, medical service representatives, and governmental officials participated in the meeting. Other officers elected for the coming year were: First Vice-President, Jack Simmons, Denver; Second Vice-President, Dr. Elmon L. Cataline, dean of the College of Pharmacy at the University of New Mexico; Third Vice-President, Chris E. Athes, president of the Utah Pharmaceutical Association; Secretary, Dr. Lawrence Gale, acting dean of the School of Pharmacy at Idaho State; and Corresponding Secretary, Elizabeth Taft, Denver, Colorado.

Dean David W. O'Day of the College of Pharmacy cooperated with other administrators at the University of Wyoming and businessmen of Laramie, Wyoming, in having a local boy scout as a guest of the college dean during the annual Boy Scouts Week in Laramie during February.

During the latter part of January, Dr. David W. O'Day, dean of the College of Pharmacy and a member of the National Committee on Student Branches of the American Pharmaceutical Association, made a trip by air to Washington, D.C., to attend a joint meeting of the National Student Branch Committee and the Committee on Local Branches which was held at the Washington Hotel and the American Pharmaceutical Association Headquarters in Washington, D.C., on January 26 and 27.

Dean David W. O'Day gave a talk on pharmaceutical education at the meeting of the Central Wyoming Pharmaceutical Association held at the Washakie Hotel in Worland, Wyoming, on February 19.

University of Wyoming College of Pharmacy faculty members gave a special educational program on "Clinical Tests as an Aid to Diagnosis in Medicine" at the March 4 meeting of the Southeastern Wyoming Pharmaceutical Association held in the Flame Room of the Adams Hotel in Rawlins, Wyoming. Those presenting the program were Dean David W. O'Day, Dr. Jack N. Bone, associate professor of pharmacy; Dr. Raymond J. Kahl, associate professor of pharmaceutical chemistry; and Mr.

William E. Johnson, instructor in pharmacy. Mrs. O'Day and Mrs. Kahl accompanied their husbands on the trip to Rawlins.

Dean David W. O'Day attended a banquet given by members of the Wyoming Chapter of Sigma Xi in honor of Dr. Fritz W. Went, professor of botany at the California Institute of Technology, in Knight Hall Cafeteria, University of Wyoming campus, on March 6.

The faculty members of the University of Wyoming College of Pharmacy in cooperation with pharmacy students conducted a College of Pharmacy Open House for Wyoming high school students and their parents who were present for the All-University of Wyoming Open House which was held on March 15, 16, and 17. Over 200 persons visited the College of Pharmacy at this All-State Open House and at other similar occasions held during the last three months.

The north entrance to the Merica Pharmacy Building has been entirely remodeled to present a very much improved appearance to the entire north side of the building. Attractive aluminum doors surrounded by beautifully placed stone work make an entrance which is both artistic and very impressive in design. (David W. O'Day)

---

*... much work must be done, and numerous studies still made if our Association is to be of the greatest service to its members, if our schools are to be the real mothers of learning we want them to be, if our campuses are to be the homes of skilled searchers for truth, if we are to help pharmacy to continue to command the respect of other professions, and to be worthy of the public support it deserves, and must receive.*

Hugh C. Muldoon, Am. J. Pharm Ed., 2, 477 (1938)

## BOOK REVIEWS

**The Law of Drugs and Druggists,**  
William R. Arthur. Fourth Edition.  
West Publishing Company, St. Paul,  
Minnesota, 1955. xxxi + 399 pp.,  
\$6.00.

This seems to be the only available text on jurisprudence that can be used regardless of the locale of the school of pharmacy in which it might be adopted. Other texts have been written, but they are too localized to be of much value generally. The material in this book is not adequate for a complete course in pharmaceutical jurisprudence, but it does merit use as a text to be supplemented with other material peculiar to the state in which the course is being taught. The content of the book can be summarized under the following headings: scope of the law, licensure, druggists' liabilities, negligence, laws of a business nature, prescriptions, labeling, poisons and household remedies, laws relative to the manufacture and wholesale distribution of drugs, contracts and torts and trial procedure—all of which is in part one. Part two consists mainly of federal regulations, particularly the Federal Food, Drug and Cosmetic Act.

This book is bound in a manner more adaptable for use as a drugstore reference than was the third edition. This is important because getting such a book into more drugstore libraries by requiring the pharmacist, while still a student, to become familiar with the types of legal problems which he will face as a business and professional man is one of the important functions

of such a course. There is more descriptive and explanatory text accompanying the cases in this edition than there was in the fourth edition. However, the addition of this material was not accompanied by a very much needed reorganization. As it is, the material is presented in a fashion that defies orderly discussion in class. Division of the material along classical legal lines would be one possible approach. It reminds one of a batch of case notes which have been well mixed up and then treated in the "order" into which they happen to fall. It is recognized that such a work cannot be a course in all of the law that a pharmacist may be concerned with, but the isolated legal concepts should be given some framework on which to hang. The present arrangement requires piecemeal assignments throughout the book for a given day's consideration.

Perhaps the greatest fault with part two of the text is that it does not contain a descriptive explanation of the Harrison Narcotic Act, nor does it adequately treat the Durham-Humphrey Law. Coverage of these two regulatory measures would make the book of far greater value as a drugstore reference.

On the whole, the book does contain a wealth of excellent material dealing with the legal problems encountered in the practice of pharmacy. Presentation of a course based on this information will give pharmacy students some awareness of the danger of incurring legal liability as pharmacists and some un-

derstanding of basic legal concepts and terminology which will enable them to discuss those problems intelligently with a lawyer when such counsel is needed.

*F. C. Hammerness*  
University of North Carolina

**Neuropharmacology**, Harold A. Abrahamsen, Editor. Transactions of the First Conference. Josiah Macy, Jr. Foundation, New York, N.Y., 1955. 210 pp., 44 figs., 15 tbls. \$4.25.

The format of this book is that of the typical Macy Conference publication. The transactions consist of a number of reports on certain highly specialized topics concerned with the effects of drugs on the central nervous system. Each of the papers is given by an authority in the particular field, and the formal presentations are punctuated by the comments and questions of the other participants in the conference.

This book makes interesting reading for those personally familiar with the individuals participating or for those currently engaged in research in one or more of the areas discussed. The uninitiated will find it disjointed.

One of the highlights of the First Conference on Neuropharmacology was the heated discussion on the problems and limitations inherent in the use of nitrous oxide for the measurement of cerebral blood-flow and over-all cerebral metabolism.

While the reviewer would recommend that these transactions be a part of the pharmacy library, this book would be of little value to pharmacy students and practicing pharmacists and of limited value to graduate students specializing in pharmacology or related fields.

*Theodore M. Brody*  
University of Michigan

**Laboratory Manual For Introduction to Pharmacy**, Henry M. Bur-

lage, Joseph B. Burt, L. Wait Rising, and William J. Sheffield, Jr. Third Edition. McGraw-Hill Book Co., Inc., New York, N.Y., 1956. xv + 271 pp., 14 figs. \$4.50.

The third edition is prepared under the new title to conform with the title change made in the third edition of the text which it is intended to accompany. Teachers acquainted with previous editions of this manual should know that the authors had planned to delete some of the simpler experiments in the first part of the manual, but recent experiences of the authors with beginning students of pharmacy did not warrant this deletion.

The manual contains 20 experiments ranging from "Study of the Gas Burner and Flame" to "Materials Used in Pharmacy." This reviewer would like to break down the last experiment on "Materials Used in Pharmacy" into several experiments and use them in the laboratory course in pharmaceutical technology because it brings out very nicely some of the important details that should be observed in the use of the pharmaceutical necessities official in USP XV and NF X. Also it would seem to this reviewer that teachers of pharmacy delegated to teach the laboratory course in physical pharmacy, but handicapped because of no required prerequisite in physical chemistry, might use about 12 of these experiments to advantage. With the exception of the last experiment, there is a logical sequence of fundamental physical concepts progressing from the simple to the complex which follows the text by the same authors.

The questions on each experiment are very helpful in pointing out the fundamental physical concepts which are more easily taught in the laboratory than they are in the class room. For those colleges of pharmacy giving a beginning pharmacy laboratory prior to the course in pharmaceutical

preparations, this manual is admirably adapted.

C. Lee Huyck

St. Louis College of Pharmacy  
and Allied Sciences

**Synthetic Drugs.** H. Ronald Fleck. Cleaver-Hume Press Ltd., London (American distributor: Elsevier Press, Inc., Houston, Texas), 1955. viii + 380 pp., 4 tbls. \$12.50.

In the preface the author states his ambition of writing a book on synthetic drugs "which would aim at collating the synthetic, the analytical, and the clinical aspects . . ." For most of the drugs treated, information is provided on the systematic name, structural formula, synthesis, properties, clinical data, and dosage. Fifteen different groups of drugs are covered: amebicides, anesthetics (inhalation, local, fixed, and spinal), analgesics and antipyretics, antibiotics, anti-convulsants, antihistamines, anti-malarials, anti-tuberculous drugs, autonomic drugs (adrenergic and cholinergic), cardiac drugs (cardio-vascular agents, anti-coagulants, mercurial diuretics), hormones, hypnotics and sedatives, muscular relaxants and hypotensive drugs, sulfonamides, and vitamins. In addition, a supplement containing "recent work on antibiotics" and information on "a recent antispasmodic" is included.

The main feature of this book lies in its furnishing a handy source of synthetic procedures for many important drugs. In this regard, its subtitle, "A Handbook for Chemists, Physicians and Pharmacists," is appropriate. However, it is not an inclusive work since the author has selected only important and representative examples of each class of compounds and has been selective in presenting synthetic procedures. It is to be regretted that a policy of giving literature references for synthetic procedures and other data was not consistently followed. In some instances detailed directions are pro-

vided together with references, while in other cases, all that is given are very general directions presuming a broad knowledge of synthetic procedures and without references.

This book should be valuable to the senior pharmacy student or the young graduate student who is beginning to study synthetic procedures for the preparation of medicinal agents. For those pharmacy schools providing laboratory work in organic pharmaceutical chemistry, it may be useful as a text and certainly would be indispensable as a reference. The additional material which it provides on physical properties and, in some cases, qualitative tests, will be of additional help to the young student. For the advanced student and research worker, it lacks the theoretical treatment and correlation of chemical structures to pharmacological activity that provides the stimulation for new ideas found in such volumes as *Medicinal Chemistry* by Burger. It would be difficult to use as a text in organic pharmaceutical chemistry courses as a substitute for the familiar books by Wilson and Gisvold or Jenkins and Hartung.

Perhaps in this age of rapid developments in the highly competitive field of synthetic medicinals, it is to be expected that the time interval between submission of a manuscript and publication date will prevent the inclusion of many important developments familiar to students in the field. Then, too, it may be only a difference in tempo of living that prompts an American to be critical of a British book published late in 1955 for not having in it references to material published later than 1953.

Considering that it is a first edition, the author is to be commended for the limited number of errors discovered among the large number of structural formulas and equations that add so much to the book. An extensive index with ample cross listings will add to the utility of the work as a reference. It is definitely

recommended for inclusion in all pharmacy libraries.

*Allen I. White  
State College of Washington*

**Chemistry of the Pesticides**, Donald E. H. Frear. Third Edition. D. Van Nostrand Company, Inc., New York, N.Y., 1955. vi + 469 pp., 32 figs., 19 tbls. \$8.00.

This excellent book of twenty-three chapters is divided into seven parts, each dealing with a specific group of pesticidal materials. These groups are as follows: synthetic organic insecticides, natural organic insecticides, inorganic insecticides, fungicides, herbicides, adjuvants, and rodenticides.

In addition to a consideration of the chemistry of the various compounds, the author has included a great deal of information concerning the history, physical properties, uses, advantages, and disadvantages of the items covered. The reviewer believes this book to be outstanding in its field and recommends its use in any course dealing with pesticidal materials. It makes a fine textbook for use in pharmacy college courses dealing with pesticides, and as a reference book it should be included in all pharmacy college libraries. Students using this book as a text should be advised not to dispose of it at the termination of the course in which it is used, but to retain the book for reference purposes.

*Maynard W. Quimby  
Massachusetts College of Pharmacy*

**Remington's Practice of Pharmacy**, Eric V. Martin and E. Fullerton Cook. Eleventh Edition. The Mack Publishing Company, Easton, Pennsylvania, 1956. xii + 1707 pp., 1000+ illus. \$18.00.

The rapid advances of pharmacy and its allied sciences during the past few years have necessitated the most profound revision of this textbook since the first edition appeared in

1885, and, as before, it continues to function as one of the most complete commentaries on the pharmaceutical profession as a whole.

The up-to-date eleventh edition includes all new admissions and changes in drugs recognized by the USP XV and the NF X; in addition it contains much authoritative information about their uses and doses. Thousands of current pharmaceutical specialties and synonyms are included.

The 1956 edition is arranged in nine major sections which are further subdivided into a total of one hundred chapters in a convenient and logical order. The individual monographs of official drugs are classified according to their properties and class of preparation and are found in their appropriate sections as in previous editions. These sections are titled: Introduction to Pharmacy, Physical Pharmacy, Preparations of Pharmacy, Inorganic Pharmacy, Organic Pharmacy, Biological Pharmacy, Professional Services of Pharmacy, and Appendix.

The major changes consist of a greatly expanded section on Physical Pharmacy including three new chapters: Rheology, Chromatography, and Physical Properties and Molecular Structure. There are also enlarged sections on compounding, dispensing, prescription pricing, and the operation of a retail pharmacy by modern business methods. Furthermore, a chapter on Veterinary Service has been added and the chapter on Radioactive Elements has been greatly expanded. In order to keep the book to a practical size as well as up-to-date, all of the remaining chapters have been completely rewritten and some of them have been condensed. The chapter on Prescription Incompatibilities has been dropped entirely.

The authors of this edition have indeed succeeded in recognizing the economic and professional needs of pharmacists in all activities including students, retail and hospital pharmacists, educators, manufacturers, and

executives. The value of this book to the pharmaceutical profession has been long recognized; it certainly should be included in any pharmacy library—as, of course, a reference rather than a text for any specific area.

This eleventh edition, as before, is thoroughly indexed to provide quick access to a wealth of information and is recommended by the reviewer as being truly "the one-volume library of pharmacy."

*E. Roy Hammarlund  
State College of Washington*

**Antimetabolites and Cancer**, C. P. Rhoads, Editor. American Association for the Advancement of Science, Washington 5, D.C., 1955. 318 pp., 54 illus. \$5.75 (\$5.00 for AAAS members).

This book represents the proceedings of a symposium held on December 28 and 29, 1953, at the Boston Meeting of the AAAS. The papers presented by eminent authorities in their respective fields make up-to-date information available on the subject of antimetabolites not only as related to cancer, but also as related to such topics as normal and atypical plant growth and inhibition of microbial growth by normal metabolites. All of the 18 papers are authored by representatives of a wide range of interests and schools, by pathologists, by chemists, by microbiologists and botanists. An excellent list of references is included at the end of each chapter. The discussions appear at the end of the book. Tables and illustrations are clear. While much of the information contained in the book is available in numerous scientific publications, many a reader will be grateful that it has been collected and presented in an excellent manner in a single book.

In the opinion of this reviewer, it is not a book for the average undergraduate student, but it is an excellent source of information for re-

search workers in the field as well as for teachers of courses of chemotherapy. The book is recommended as an addition to a department or school library.

*Ernst R. Kirch  
University of Illinois*

**The American Drug Index**, Charles O. Wilson and Tony Everett Jones. J. B. Lippincott Company, Philadelphia and Montreal, 1956. 576 pp., 66 tabs. \$5.00.

*The American Drug Index* is a compilation of pharmaceuticals which are available to pharmacists, physicians, dentists, and members of the allied professions.

The items are listed alphabetically according to the following types of names: generic, brand, chemical, U.S.P., N.F., N.N.R., and A.D.R. Cross-indexing is employed to a considerable extent, making it possible to find a product under any of its other names. Another desirable feature usually enables one to find a product if only one major ingredient of a combination is known. This may be accomplished simply by looking up the known drug in the alphabetical listing. The following information is supplied for each drug: other names, manufacturer, active ingredients, dosage forms, size, dosage, and use.

Numerous tables are utilized to provide comparisons with the multitude of products containing similar ingredients.

Included in the alphabetical listing of the drugs are therapeutic classifications. While these listings are quite thorough, they are not complete. This is of minor consequence inasmuch as the few products that are missing may be found under one of their other names.

This book compares favorably with other books in its field. It contains more product descriptions than the other books, and its cross-indexing system is unique. On the other hand, this book has no manufacturer's in-

dex, and the description of the uses and doses are not as detailed as is the case in the other books.

In view of the tremendous number of drug products available, and since this comprehensive index covers such a wide scope, it is recommended that it be a part of the library of each pharmacy in the United States.

It is hoped that the book will be revised annually so that the current needs of the pharmacist can be met.

The authors are to be commended for the arduous task of compiling so much information between the covers of one book.

*Salvatore J. Greco*  
*The George Washington University*

**Handbook of Chemistry and Physics**, Charles D. Hodgman, Editor-in-Chief. Thirty-seventh Edition. Chemical Rubber Publishing Company, 2310 Superior Ave., N.E., Cleveland, Ohio, 1955. xxii + 3156 pp. \$9.00.

This latest edition of a well-known handbook maintains the same characteristic scheme of arrangement and general features of past editions. There is evidence of continuous revision of tables and a total of 110 page numbers at the ends of sections has been reserved for future expansion. Some new tables added in this edition are Oxidation and Ionization Potentials, Viscosity Conversion Factors, Dielectric Constants of Water, Dipole Moments, Activity Coefficients, Crystal Ionic Radii of Elements, Allowable Carrying Capacities of Conductors, and Formulas for Calculating Titration Data. Heavy contrasting paper dividers set off the five major divisions of Mathematical Tables, Properties and Physical Constants, General Chemical Tables, Physics Tables, and Tables of Quantities and Units.

For the many workers in the physical sciences who desire within one volume data on both physics and

chemistry as well as mathematical tables, this handbook serves excellently. If the reader has been consulting an edition only a few years old, he will be amazed at the additional information contained in this new edition. At times this reviewer has wished for a refractive index table of organic liquids similar to the melting point index and formula index of organic compounds which would give quick help in compound identification. It is encouraging to note the more than one hundred seventy chemists and physicists who are cooperating in the ceaseless revision and expansion of the data of this handbook to make the information more accurate and complete.

*M. P. Puterbaugh*  
*University of Kansas City*

**Ionic Interpretation of Drug Action in Chemotherapeutic Research**, Alexander V. Tolstouhov. Chemical Publishing Co., Inc., New York, N.Y., 1955. 276 pp., 12 figs., 77 tbs. \$10.00.

The planning of a program of research and development of new chemotherapeutic agents requires formulation of hypotheses concerning the relationship of chemical and physical properties of compounds and the desired biological action. It is the purpose of Dr. Tolstouhov to promote the use of certain physical properties, primarily dissociation constants and solubilities in predicting activity. Certainly any new theoretical or experimental approach for explaining differences or similarities in biological activity of new organic compounds would be welcomed. The book opens with an introduction pointing out examples in which the purely structural approach to new chemotherapeutic agents has been at best very unproductive, and then proposes that "...the structure of dyes or drugs is the least important factor in determining their staining properties or biological activity," and

that "the relation between the biological activity of compounds and their physicochemical characteristics is quite simple."

After such a promising beginning, much of the remainder of the book was disappointing. There follow, in effect, three main topics of discussion. The first concerns experiments using acidic and basic dyes which demonstrate the importance of pH, dissociation constants, and solubilities upon dye mixtures and their relation to the problem of staining bacteria. Next, there is a long section devoted to various drugs and detoxification reactions. My greatest criticism is of the general inadequacy of the pharmacological and clinical evidence cited in support of the author's views. His own work, primarily *in vitro* studies with dyes and pure substances, seems carefully done, although frequently the text is burdened with detailed laboratory directions and observations. However, pharmacological studies to correlate with dissociation constants are frequently little more than qualitative tests, not quantitative determinations of activity. Likewise, isolated and diverse clinical observations are quoted without evaluation in support of hypotheses. In his enthusiasm for his thesis, that structure is a minor factor in pharmacological action, he seems not to realize that similar pharmacological actions and therapeutic benefits may be obtained by drugs which have entirely different mechanisms of action. He does not consider that such drugs may only coincidentally have similar dissociation constants (such as the spirocheticidal actions of penicillin and arsenicals). The final chapter of the book is devoted to the determination and calculation of dissociation and hydrolytic constants of salts, acids, and bases.

I feel that students interested in the problem of ionization and drug action will find the presentation in *Pharmacological Reviews* by Adrien

Albert entitled "Ionization, pH and Biological Activity" to be more useful.

James R. Weeks  
Drake University

**A Textbook of Pharmacognosy**, N. M. Ferguson. The Macmillan Company, New York, N.Y., 1956. vii + 374 pp., 12 figs., 59 tabs. \$7.00.

This textbook presents the subject of pharmacognosy according to a pattern that is new among American textbooks of the subject. The division of natural drugs is into chemical groups, and the pattern used is essentially that proposed in *The Pharmaceutical Curriculum* by L. E. Blauch and G. L. Webster. The text is further distinctive in that it is documented through references and selected reading lists with each chapter. In each chapter, following a general discussion, individual drugs are presented briefly in tabular form, and this presentation is followed by more complete details of source, preparation, principal constituents, and use.

The less than casual treatment given in certain aspects of pharmacognostic knowledge may be of real concern to many pharmacognosy teachers. The professional or lay reader of this textbook could not gain an appreciation of the role of botany (histology, anatomy, ecology) and microscopy in pharmacognosy studies and understandings. It is noteworthy, also, to mention that inaccuracies of understanding were observed by the reviewer. Not all pure volatile oils are colorless; most of the drugs used in pharmacy are not obtained from plants; leaves do act as "storage centers"; the action of lobeline is not correct, etc.

The author has achieved a presentation that is systematic, simple, and, within its scope, quite thorough. The volume fills a void in a field where textbooks are infrequent and will be

used eagerly and successfully by both teacher and student.

Arthur E. Schwarting  
University of Connecticut

**Public Relations for the Pharmacist.**

William H. Hull. J. B. Lippincott Company, Philadelphia, Pennsylvania, 1955. xi + 132 pp. \$4.50.

One of the most satisfactory definitions of public relations is that it is an explanation of the intent underlying certain activities and a chronicle of how well that intent is carried out. The implications of this definition of public relations are, obviously, broad. Applied to pharmacy, public relations would consist of any activity or combination of activities (aimed at) informing or explaining to the public the background, nature, value, and the motivations underlying pharmacy's professional and entrepreneurial services to the community, and how they relate to the public good . . . with the fundamental objective of making the public think more favorably about the profession of pharmacy itself.

That organized efforts to improve pharmacy's relations with the public on a national, state, and local level are necessary to accomplish this objective is a well-recognized fact. But it is also recognized that, in the final analysis, it is the pharmacist who is burdened with the principal part of the job of convincing the public that pharmacy contributes a most vital service to the community.

It was, as the author explains, to help show the pharmacist how to go about discharging his public relations duties and responsibilities, that he prepared his text, *Public Relations for the Pharmacist*. Unfortunately, however, the book never seems to get beyond the narrow, individual "merchant-profit" approach to the retail pharmacist's public relations problems.

Proceeding on the (reasonable) theory that all retail procedures and

practices involving contact with the public are, in fact, public relations . . . or relations with the public . . . Mr. Hull has compiled what might be characterized as a short, "how-to" management primer.

Chapter one deals briefly with the importance of developing a professional personality with emphasis on the obligations of the pharmacist to participate in community affairs. In chapter two, "Building Prescription Practice," the author goes on to describe how the pharmacist can build prescription volume by using techniques which tend to develop "good" relations with physicians, customers, and others.

He points up the need for professional efficiency and recommends a program for detailing the physician and developing better interprofessional liaison. One might question the author's suggestion that "a discussion of a biological refrigerator" or "the use of a narcotics safe" are messages worthy of the physician's time.

Aside from the fact that the author's suggestions for developing good relations with customers are somewhat oriented towards the retail druggist, they are not too different from those one might find far more comprehensively covered in any good text book on retail management.

In discussing the problem of customer relations in suburban and small town pharmacies, the author touches upon such matters as developing the right "attitude," local advertising activities, and the scope of services the pharmacist should render.

Chapters four and five present briefly some of the technical aspects of direct mail advertising and a telescoped discussion of consumer advertising and its value to the retail pharmacist, along with some very brief pointers on the how, when, and where of advertising.

The remainder of the text deals with two problems: (1) the dispens-

ing physician and how to handle him, and (2) the value of professional ethics within the framework of professional practice. It is worth noting that the specific "answers" offered for handling the problem of the dispensing physician have not been singularly successful. The author's approach to the problem does, however, make much sense.

Mr. Hull winds up his text with a list of some fifty questions which he suggests the reader ask himself. These questions touch upon practically every aspect of retail drugstore management.

Viewed as no more than an easy-to-read, "how-to" retail management primer, calculated to make the practicing pharmacist a little more conscious of the need for better customer and physician relations, and, in addition, providing him with a few ideas on ways and means of meeting this important need, the book may very well have some value. It is not, for the reasons stated earlier, the kind of book that one would recommend as "must" or "near-must" reading for the pharmacy administration student studying either retail drugstore management or applied principles and practices of public relations at the retail level.

S. B. Jeffries

Brooklyn College of Pharmacy

**Epitome of the Pharmacopeia and National Formulary**, issued under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Tenth Edition. J. B. Lippincott Company, Philadelphia, Pennsylvania, 1955. xiii + 322 pp. \$3.00.

The new tenth edition follows the general plan of the previous editions and includes the drugs found in the two official compendiums, the *USP XI* and the *NFX*. Descriptions of the official items contain such information as the official titles, syn-

onyms, brief definitions, concise descriptions of the physical properties, actions, uses, and dosage. Some of the dosage statements are taken from the official compendiums and give the average adult doses as well as additional suggestions concerning dosage. Adverse comment is made on preparations believed to be of doubtful therapeutic value. The metric system is used; however, adequate conversion tables are included in the introductory pages.

The publication is not intended to be a textbook or a substitute for the two official compendiums, but rather is intended to present in a summarized and alphabetical manner some of the information to be found in the official compendiums without including all of the technical information on the official tests and assays. Although the *Epitome* was designed to serve as a companion volume to *New and Nonofficial Remedies* as a reference for physicians, the very nature and style of the publication should make it a valued and useful reference tool for students and practitioners alike in the health sciences who need to keep abreast with trends in modern drug therapy.

Fred G. Drommond  
University of Colorado

**Handbook of Toxicology, Volume I, Acute Toxicities of Solids, Liquids, and Gases to Laboratory Animals**, William S. Spector, Editor. W. B. Saunders Company, Philadelphia, Pennsylvania, 1956. vii + 408 pp., 2 tbls. \$7.00.

The *Handbook of Toxicology*, Volume I, represents a compilation of toxicity data gathered from the literature by 29 authorities, Dr. W. F. von Oettingen being the principal contributor. The compilation of this data has been prepared under a contract between the National Academy of Science and the Aero Medical Laboratory, Wright Air Development Center, United States Air Force. The

book is composed mainly of two tables, the first contains toxicity data for 2120 solids and liquids, while the second contains similar data for 243 gases, vapors, and fumes. The data for the compounds are arranged in the following manner: compound, animal, route, dosage value in mg./kg., dosage range in mg./kg., vehicle, time of death, and reference. This uniform tabular arrangement is used throughout, with certain obvious modifications for the gaseous data, even though not all this material is listed for many of the compounds. The use of appropriate footnotes allows for additional clarity.

For the majority of the compounds the toxicity data are presented for 3, 4, or 5 different species of animals. One compound, fluoroacetate, is described for 22 different species in addition to varieties within the species. Certain lesser compounds are listed for one or two different laboratory animals, these generally being the rat or the mouse. Most of the data have been obtained from the literature of the last 10 to 20 years although one reference dating back to 1878 was found. The material has been examined for accuracy by the researchers as well as a panel of review experts.

The rather wide coverage of the literature, much of it appearing before the recent attempts to describe fatalities in terms of statistical variability, necessitates the use of such terms as lethal dose, minimum lethal dose, and other such indefinite terminology. Since each dose is referenced, this allows the reader to examine the original works and draw his own conclusions about mortality as well as other pertinent information. These references are valuable within themselves.

There are no claims for completeness or finality, in fact, the editor invites submission of any data the reader may feel need reconsideration as well as any additional data which

would increase the coverage of the tables. It is assumed by the reviewer that this additional information may appear in the forthcoming Volumes, II, III, IV, and V, which will cover many other toxicological materials. These volumes are tentatively scheduled for publication during 1956 and 1957.

The reviewer has had a brief opportunity to use this handbook with regard to certain compounds and has found the coverage to be quite accurate and comprehensive, although a number of the more recently introduced or synthesized compounds are not included in this volume. It is hoped that these compounds will be included in subsequent volumes or possibly supplements to this volume.

The handbook is well indexed and for many compounds includes synonyms, proprietary and/or official names where applicable, which allows for cross-indexing. Chemical nomenclature is that recommended by *Chemical Abstracts*.

The reviewer is unaware of any other reference which duplicates the scope of this book. Although of little direct value to the undergraduate, the handbook has been particularly useful to the reviewer's students in their determination of pharmacological unknowns. This book is a must for anyone doing research or investigational work in pharmacology and toxicology and is definitely a book which should be placed in the libraries of teaching and research institutions.

Donald C. Kroeger  
University of Houston

**Pharmacopoeia Internationalis**,  
Prepared by the World Health Organization Expert Advisory Panel on International Pharmacopoeia and Pharmaceutical Preparations and by the World Health Organization Secretariat. First Edition, Volume I. World Health Organization, Palais Des Nations, Geneva, 1955. xx + 350 pp. \$6.75.

The general plan of this volume is like that of Volume I with a monograph pattern similar to the form used in the United States Pharmacopeia XV and the National Formulary X, but not as inclusive. Volume II is a compilation of monographs on important therapeutic substances not included in Volume I. General notices, information, and instructions given in Volume I apply equally to Volume II. Standards for the strength, purity, and quality of therapeutic substances given in Volume I apply to these when used in a pharmaceutical preparation included in Volume II. There are additions representing drugs of recent introduction to therapeutics and certain classes of dosage forms not found in Volume I. The extent of coverage of drugs, chemicals, and pharmaceutical preparations is limited, and a number of the recognized dosage forms are not included.

Familiar therapeutic substances are found under titles different from names used in the American official compendiums. Some substances are recognized in different forms or in more than one form than as they are found in American compendiums. General methods of preparation for recognized classes of pharmaceutical preparations differ from the American standard references.

Titles used in the monographs are in Latin while the remainder of information appears in English. The several appendices contain a table on usual and maximal doses for adults and a table on usual daily doses for children. No therapeutic use or dose is given for any medicinal substance or preparation as a part of the monograph. There are procedures for biological assays, special tests and procedures, such as an insulin assay and blood sugar tests, and others as part of the appendices. Volume II appendices supplement those in Volume I. Volume II contains a listing of monograph titles that appear in Volume I, and the index is for both volumes.

Together Volumes I and II strengthen the objectives as originally intended by enlarging the scope and coverage of important therapeutic substances. Uniform nomenclature standards and strengths are desirable and should go a long way toward facilitating international understanding and exchange of medication. Volume I and Volume II go together, for one complements the other. These are valuable additions for pharmacy libraries, particularly for those associated with medical schools or where foreign students are studying.

Without compendiums that establish uniformity of standards for strength, purity, and quality, there develops confusion which can lead to inconvenience and misunderstanding. World travel and interchange of world goods require a mutual understanding among those engaged in manufacture, distribution, dispensing, and administration of medication. These volumes can well serve as a basis for the preparation of local pharmacopeias to meet particular needs as well as to insure suitable and uniform quality, qualitative and quantitative, for important therapeutic agents in international commerce.

*M. L. Neuroth  
Medical College of Virginia*

**The Chemistry of Lipids of Biological Significance**, J. A. Lovorn. John Wiley and Sons, Inc., New York, N.Y., 1955. xiii + 132 pp., 4 figs., 2 tbs. \$1.75.

This is another book of the excellent series of Methuen's Monographs on Biochemical subjects. In this monograph, the author, by emphasizing the interrelationships of various lipid classes, and in describing the chemistry of the features common to many of these classes, has attempted to integrate the complex subject of the lipids. If the reader has a prior knowledge of basic lipid chemistry, he will have little difficulty in understanding the logical

presentation of this work. Dr. Lovern introduces his book by first discussing the difficulties which exist in accurately defining and classifying the lipids and by outlining the scope and guiding principle of the monograph. In chapter one the author classifies and describes the basic chemical constitution of the triglycerides, the glycerophosphatides, the sphingolipids, the sterols and sterol esters, and the waxes. The following chapter gives a brief review of the methods of extraction, purification, isolation, and analysis of lipids from natural sources, and the author illustrates the complexity of the problems involved in these procedures. Chapter three is devoted to a discussion of the molecular associations of the lipids with other tissue constituents. Evidence for the physical association of lipids and proteins, for the complex formation between lipids, proteins and/or carbohydrates, and evidence regarding the structure of lipoproteins is presented. In the fourth chapter the author discusses the dynamic state of the lipids in the tissues and experimental work with labelled molecules on the turnover rates of lipids in the tissues is evaluated. Dr. Lovern in the concluding chapter advances the modern theories regarding function of lipids in living organisms.

Being a monograph, the book is not intended to give an exhaustive treatment of subject matter. This book emphasizes, rather, the general principles of lipid chemistry, the common features, and interrelationship of the lipids and the modern trends in lipid research. The author's statements are well documented, and the bibliography at the end of each chapter gives the interested reader ample reference material for further study. Although the book is not suitable as a text book for pharmacy students, it would be a valuable reference for advanced students in phar-

macy and is recommended for the pharmacy library.

*Carman A. Bliss*  
*University of Southern California*

**Poisoning, A Guide to Clinical Diagnosis and Treatment**, W. F. von Oettingen. Paul B. Hoeber, Inc. Medical Book Department of Harper and Brothers, New York, N.Y., 1954. x + 524 pp. \$10.00.

In the reviewer's opinion, the author has presented a comprehensive reference guide which will be a ready and valuable source of information for the physician and the pharmacist. It will aid in detecting the causative agent of poisoning and in instituting prompt, effective treatment. Much thought has gone into the arrangement of the contents which is planned specifically to save time in emergencies.

The book is divided into four parts, and an extensive bibliography is appended to each part. In the first part of the book the classification of poisons, the medico-legal aspects and the responsibilities of the physician, and the emergency measures and equipment necessary for the treatment of poisons are discussed.

The second section deals with the clinical diagnosis of poisoning, using the patient's history as a background, and describes pathological conditions observed in the course of a medical examination. The characteristic signs and symptoms observed in the patient are classified by body systems and are followed by a list of drugs and chemicals known to cause such effects. This section is concluded by a chapter describing laboratory tests used for the chemical identification of poisons.

The third section describes the separate steps in the management of cases of poisoning. Emphasis is placed on the technics available for removal of toxic agents and the symptomatic treatment which can be em-

ployed before or during the removal of the toxic substance.

The final and largest section of the book contains an alphabetical listing of 461 poisons. The author includes, under each poison, a concise synopsis of the clinical picture and the treatment required.

This book does not deal with the mechanism of action of the poisons discussed, but a most adequate list of references to publications in this area is included. This book should serve as an excellent reference work for the practicing physician, the pharmacist, and the teacher of toxicology and pharmacology.

*Hugh C. Ferguson  
University of New Mexico*

**Modern Nutrition in Health and Disease**, edited by M. G. Wohl and R. S. Goodhart in collaboration with fifty-five different contributors. Lea and Febiger, Philadelphia, Pennsylvania, 1955. 1062 pp., 80 illus., 127 tbls. \$18.50.

In this volume the authors have endeavored to present an up-to-date discussion of every aspect of nutrition. In the opinion of this reviewer, they have succeeded rather well in this ambitious undertaking. They have systematically organized and reviewed, with the assistance of a large group of experts, the voluminous literature dealing with the important aspects of nutrition in our modern industrialized society. The work should serve as a handy source of reference to the practicing physician as well as others in professions dealing with public health; students and faculties in medical, dental, pharmacy, and nursing education will find it a comprehensive and authoritative reference for the various phases of nutritional science. It is very well adapted for use as a text for courses in nutrition.

The volume is divided into three sections dealing specifically with normal nutrition, nutrition in health, and

nutrition in periods of physiological stress. A total of thirty-seven chapters is devoted to the material in these three sections. Much useful information on the physiology of digestion and absorption of nutrients is included in the first ten chapters. All vitamins affecting human nutrition, either old or new from the standpoint of discovery, are discussed. In addition, two chapters are devoted to the metabolism of calcium and phosphorus, iodine, iron and other essential trace elements.

The physiological approach to nutrition is used throughout the text. Strong emphasis is placed on the physiological basis of the different recognized nutritional deficiency syndromes, and on the interrelationships of the nutrient elements, vitamin and mineral.

The physiological background, developed very clearly in the first ten chapters, plus a consecutive arrangement of subject materials, makes for a commendable legibility of the material covered. It can be read understandably by the student or public health worker who has not been able to keep abreast of the literature of nutrition.

*Elbert Voss  
University of Florida*

**Medical Research: A Midcentury Survey**, Volumes I and II, Esther Everett Lape, ed., Little, Brown and Company, Boston and Toronto, 1955. xxvi + 765 pp. \$15.00.

Whether in administration or research, thinking men in pharmacy will find challenging ideas in both of these volumes. Until one can get a picture all in one place like that shown in Volume I, it is difficult to realize how much the background of medical (and in this broad field I include pharmacy) research has changed. The interest of the public, the government, the foundations, the industries, and the university administrations in research has produced sweeping changes. It is practically

impossible not to get financial support for research. This may be bad because the quiet Ivory Tower laboratory is no more; but things can be gotten done, and life is probably a lot more exciting. This change of climatic background for research has resulted in some new and potentially productive attitudes. One of these is the crumbling of departmental barriers. For example, twenty years ago a department of anatomy was concerned only with gross and microscopic structures of the human body. Today one might almost say that this is now regarded as a completed chapter in medical science and anatomists are no longer occupied with this kind of research. The contemporary anatomist may be a biochemist, a physiologist, or even a mathematician. This kind of development which is permeating all of the generally accepted areas of medical research is probably happening or will soon happen in the classical divisions of pharmacy. One might ask whether or not the chapter is about completed in an area such as pharmaceutical compounding and dispensing. If this is the case, then an active and aggressive research mind in this field will inevitably find profitable extensions and ramifications of his interests, and there need be no excuses doing this.

From the examination of the title it appears that Volume II would have little interest to the pharmaceutical scientists since it is titled "Unsolved Clinical Problems"; among these problems are cancer, hypertension, rheumatic fever, and schizophrenia. Also the authors approach these unsolved problems from a "biological perspective." However, if these are really the unsolved problems of medical science and will occupy a great deal of the research activity, the pharmaceutical scientist will find much to challenge him therein. For example, right now at the mid-century, the biological approach is the dominant one. Yet throughout the discussions there is

the implication made repeatedly that real understanding of these problems must inevitably lead to an explanation on a chemical or physical basis. Hence, understanding these broad trends and extrapolating from developments in the past, the chemically oriented pharmaceutical researcher may have reason for confidence. Every serious worker in pharmaceutical science must from time to time stop and take a look at what he is doing from a broad viewpoint. These volumes will be a good way for one to begin thinking about such basic questions as: What am I doing? Why am I doing it? and, What is its ultimate meaning?

Although these two volumes cover almost 1500 pages, the literary style is remarkably clear and almost as pleasurable to read as Goodman and Gilman. Since a large number of authorities and consultants had a hand in preparation of the text, it is a real credit to bring such excellent synthesis of a vast amount of heterogenous material.

*(The author of this review, a prominent medical educator and researcher, wishes to remain anonymous)*

**The Dispensatory of the United States of America**, Arthur Osol and George E. Farrar, Jr. 25th Edition. J. B. Lippincott, Philadelphia, Pennsylvania, 1955. xvii + 2139 pp. \$25.00.

This volume follows the pattern of previous editions in attempting to consolidate in one book a comprehensive report on the drugs used in pharmacy and medicine. It is a complete and well-documented encyclopedia, and the authors have done an admirable job in selecting and reporting this information. The 25th Edition of *The Dispensatory* has three parts: Part I lists the drugs recognized by the latest revisions of the United States Pharmacopeia, The National Formulary, the British Pharmacopeia, and the International Pharmacopeia; Part II consists of

medicinal agents of current interest which are not recognized in the official compendia or which were formerly official and of general information on pharmacological and pharmaceutical classes of drugs; Part III is devoted to veterinary uses and doses of drugs. Missing from this edition are the general tests, processes, reagents, and most of the tables of the official compendia giving atomic and molecular weights, thermometric equivalents, weight-volume relationships, and certified coal tar dyes, which were in the 24th edition. However, the inclusion of over 500 new drugs necessitated this move, and the text is not harmed by this deletion.

Information on the official preparations in Part I is presented in the same manner as in previous editions except that a more complete discussion of uses and dosage is given for most drugs. In addition to the official usual dose, the dosage range and maximum total dose in 24 hours, and variations of dosage in different diseases are given. Each monograph in this section is concise but complete and is written in a manner that makes reading easy.

Of particular interest in Part II are the numerous general articles on pharmacological classes of drugs. In addition to discussions of the chemical structure, mechanism of action, and therapeutic uses, many trade-named products which are unofficial are identified. Examples of these articles are features on antibiotics, antihistamines, barbiturates, chemical

warfare agents, medicinal dyes, parasympathomimetic agents, and radioactive medicinals. In addition, individual monographs on substances from Absinthium to Krebiozen to Zygadenus are presented. A full realization of the wealth of information in this one section alone should make every pharmacist regard this book as a necessary part of his library.

Part III has been enlarged over the 24th edition by 63 pages and lists all of the commonly used veterinary products. Many new preparations are included along with additional data for the older drugs, and developments in veterinary therapeutics are discussed as well.

Mention should be made of the index of the dispensatory because it is itself a noteworthy accomplishment. It consists of 80 pages with approximately 225 items on a page. Many preparations are cross-indexed, and any desired subject can be easily and quickly located.

This dispensatory is more than just a book—it is a monument to pharmacy and to those who have worked on it. It is an authoritative source for answers to any conceivable question pertaining to pharmaceutical preparations and no pharmacy library can be complete without it. It is recommended as a reference book for all engaged in the various areas of pharmacy and medicine and particularly for the practicing pharmacist.

*Glen J. Sperandio  
Purdue University*

---

*... every effort should be made to imbue the young men and women in the colleges with a spirit of unity and cooperation and to educate them to the value and importance of united and concentrated effort toward definite ends.*

B. V. Christensen, Am. J. Pharm. Ed., 3, 254 (1939)

## NEW BOOKS

**The Physician and the Law**, Rowland H. Long. Appleton-Century-Crofts, Inc., New York, 1955. 284 pp. \$5.75.

**Introduction to Paper Electrophoresis**, Michael Lederer. Elsevier Publishing Company, Houston, Texas, 1955. 206 pp., 70 figs., 31 tbls. \$7.75.

**The Chemistry and Reactivity of Collagen**, K. H. Gustavson. Academic Press, Inc., New York, 1956. iv + 342 pp., 46 figs., 37 tbls. \$8.00.

**Microbiology**, Florene C. Kelly and K. Ellen Hite. Second Edition. Appleton-Century-Crofts, Inc., New York, 1955. 615 pp., 185 figs., 22 tbls. \$7.50.

**Textbook of Endocrinology**, Robert H. Williams, ed. Second Edition. W. B. Saunders Company, Philadelphia, Pennsylvania, 1955. xii + 776 pp., 175 figs., 53 tbls. \$13.00.

**The Cost of the National Health Service in England and Wales**, Brian Abel-Smith and R. M. Titmuss. Cambridge University Press, New York, 1956. xx + 176 pp., 7 figs., 107 tbls. \$5.50.

**Introductory Quantitative Chemistry**, Axel R. Olson, Charles W. Koch and George C. Pimentel. W. H. Freeman and Company, San Francisco, 1956. 480 pp., 69 illus., 23 tbls. \$5.00.

**Preparation and Use of Audio-visual Aids**, Kenneth B. Haas and Harry Q. Packer. Third Edition. Prentice-Hall, Inc., New York, 1955. xii + 381 pp., illus. \$6.65 (to be reviewed in the Summer issue).

**Liquid-Liquid Extraction**, L. Alders. Elsevier Press, Houston, Texas, 1955. x + 206 pp., 110 figs., 23 tbls. \$5.50 (to be reviewed in the Summer issue).

**Education and Responsibility**, Tunis Romein. University of Kentucky Press, Lexington, Kentucky, 1955. xiv + 207 pp. \$3.50 (to be reviewed in the Summer issue).

**Psychopharmacology**, Nathan S. Kline. American Association for the Advancement of Science, Washington 5, D.C., 1956. x + 165 pp., figs, tbls. \$3.50 (\$3.00 to AAAS members) (to be reviewed in the Summer issue).

**Pharmacy in Michigan**, Richard A. Deno, Ralph M. Wilson, and Stephen Wilson. J. W. Edwards, Inc., Ann Arbor, Michigan, 1956. ix + 60 pp., 15 tbls. \$1.00 (to be reviewed in the Summer issue).

**Androgens: Biochemistry, Physiology, and Clinical Significance**, Ralph I. Dorfman, and Reginald A. ShIPLEY. John Wiley & Sons, Inc., New York, 1956. xvii + 590 pp., tbls., figs. \$13.50 (to be reviewed in the Summer issue).

**Handbook of Poisons**, Robert H. Dreisbach. Lange Medical Publications, Los Altos, California, 1955. 426 pp. \$3.00 (paper).

**Rho Chi Society**, Roy A. Bowers and David L. Cowen. American Institute of the History of Pharmacy, Madison, Wisconsin, 1955. vii + 51 pp. \$1.00.

**Why Patients See Doctors**, Seymour Standish, Jr., Blair M. Bennett, Kathleen White, and L. E.

**Powers.** University of Washington Press, Seattle, Washington, 1955. x + 94 pp., 18 figs., 36 tpls. \$2.50.

**American Druggist Blue Book,** Dan Rennick, ed. American Druggist, New York, New York, 1956. 694 pp. \$8.00 (paper).

**Study Abroad, Volume VII, 1955-56: International Handbook of Fellowships, Scholarships and Educational Exchange,** A UNESCO Publication. Columbia University Press, 1955. 708 pp. \$2.00 (paper).

**Organic Insecticides: Their Chemistry and Mode of Action,** Robert L. Metcalf. Interscience Publishers, New York, 1955. 402 pp., 7 illus., 70 tpls. \$8.50.

**The History and Conquest of Common Diseases,** Walter R. Bett, ed. University of Oklahoma Press, Norman, Oklahoma, 1955. ix + 334 pp. \$4.00.

**Food Poisoning,** Third Edition, G. M. Dack. University of Chicago Press, 1956. 256 pp. \$6.00.

**The Citadel of Learning,** James B. Conant. Yale University Press, 1956. 100 pp. \$2.00.

**Chlorpromazine and Mental Health** (The proceedings of a symposium of over 100 participating psychiatrists). Lea & Febiger, Philadelphia, Pennsylvania, 1955. 200 pp., 25 illus. \$3.00.

**Thallium Poisoning,** J. H. G. Prick and L. Muller. Elsevier Press, Houston, Texas, 1955. 155 pp., illus. \$3.95.

**Therapy of Fungus Diseases,** Thomas H. Sternberg and Victor D. Newcomer, eds. Little, Brown and Company, Boston, Massachusetts, 1955. 337 pp., illus. \$7.50.

**Biochemistry of the Developing Nervous System,** Heinrich Waelsch, ed. Academic Press, New York, 1955. 537 pp. \$11.50.

**Drug Store Operating Costs and Profits,** Orin E. Burley, Albert B. Fisher, Jr., Robert G. Cox. McGraw-Hill, New York, 1956. xi + 549 pp., 131 tpls. \$8.50 (to be reviewed in the Summer issue).

#### MISCELLANEOUS PUBLICATIONS

**Riboflavinoids and the Capillary,** Gustav J. Martin, et al. New York Academy of Science, New York, 1955. 100 pp. \$3.00 (paper).

**Reserpine in the Treatment of Neuropsychiatric, Neurological and Related Clinical Problems,** Fredrick R. Yonkman, et al. New York Academy of Science, New York, 1955. 281 pp. \$3.50 (paper).

**Hydrocortisone, its Newer Analogs and Aldosterone as Therapeutic Agents,** Joseph W. Jailer, et al. New York Academy of Science, New York, 1955. 356 pp. \$4.50 (paper).

**Psychotherapy and Counseling,** Rollo May, et al. New York Academy of Science, New York, 1955. 113 pp. \$3.50 (paper).

**Biology of Poliomyelitis,** Karl Haber, et al., New York Academy of Science, New York, 1955. 328 pp. \$5.00 (paper).

**The Graduate School Today and Tomorrow,** F. W. Strothmann. Fund for the Advancement of Education, 655 Madison Avenue, New York, 1955. 41 pp. Free (paper).

**Teaching Salaries Then and Now,** Beardsley Ruml and Sidney G. Tickton. Fund for the Advancement of Education, 655 Madison Avenue, New York, 1955. 93 pp. Free (paper).

**Teachers for Tomorrow, Staff.** Fund for the Advancement of Education, 655 Madison Avenue, New York, 1955. 72 pp. Free (paper).

**Health Careers Guidebook**, Staff. National Health Council, 1790 Broadway, New York, 1955. 153 pp. Free (paper).

**Partners for Health**, Staff. National Health Council, 1790 Broadway, New York, 1955. 40 pp. Free (paper).

**Public Attitudes Toward Prescription Costs and the Drug Industry**, Staff. Health Information Foundation, 420 Lexington Avenue, New

York, 1955. Free (paper).

**New Information for Physicians on the Salk Poliomyelitis Vaccine**, Hart E. Van Riper, ed. National Foundation for Infantile Paralysis, 120 Broadway, New York, 1956. 32 pp. Free (paper).

**Poliomyelitis Vaccine in the Fall of 1955**, Jonas E. Salk. National Foundation for Infantile Paralysis, 120 Broadway, New York, 1956. 14 pp. Free (paper).

---

*A research scientist is a man who makes a contribution to knowledge; a candidate for a doctor's degree may be one who proves that ice cream tends to melt when it is set in the sun, that the bacteriological content of an undershirt increases with the length of time it is worn, or that when the door of an electric refrigerator is constantly opened and closed the motor runs longer than when the door is shut once and kept shut.*

Anonymous, Am. J. Pharm. Ed., 3, 119 (1939)



## **FELLOWSHIPS IN PHARMACY**

To meet the demonstrated need for qualified teachers and researchers in the field of pharmacy, the American Foundation for Pharmaceutical Education announces a limited number of fellowships for students seeking graduate degrees in pharmaceutical subjects.

These fellowships are open to students (men or women) qualified for registration in approved graduate schools or colleges for one or more of the following major fields:

**PHARMACY**  
**PHARMACEUTICAL CHEMISTRY**  
**PHARMACOLOGY**  
**PHARMACOGNOSY**  
**PHARMACY ADMINISTRATION**  
**(or closely related subjects)**

The Foundation offers Teaching Fellowships in Business Administration, in cooperation with colleges of pharmacy. Deans have full information on these awards. Applications must be made jointly by individuals and their colleges.

Pfeiffer Memorial Postdoctoral Research Fellowships are available to college of pharmacy faculty members.

For application forms or further information write to

**W. Paul Briggs, Secretary**

**AMERICAN FOUNDATION FOR  
PHARMACEUTICAL EDUCATION**

**1507 M Street, N. W.**

**Washington 5, D. C.**